THE RAILWAY GAZETTE
A Journal of Management, Engineering and Operation
INCORPORATING
Railway Engineer · TRANSPORT · The Railway News
The Railway Times · Herapath's Railway Journal · THE RAILWAY RECORD.
RAILWAYS ILLUSTRATED · ESTABLISHED 1835 · THE RAILWAY OFFICIAL GAZETTE

33, TOTHILL STREET, WESTMINSTER, LONDON, S.W.1
Telephone: WHItehall 9233 (12 lines) *Telegrams: "Trazette, Parl, London"*

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LEEDS: 70, Albion Street . . . . . *Leeds 27174*

Annual subscription £3 10s. 0d. post free. Single copies, One shilling & sixpence
Registered at the G.P.O. as a newspaper. Entered as second-class matter in U.S.A.

Vol. 92] FRIDAY, JUNE 9, 1950 [No. 23

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Basis for N.U.R. Wage Claim

LAST week we commented on the decision of the General Council of the Trades Union Congress to authorise its special economic committee to examine the effect on the national economy of wage claims by individual unions. Other recent activities in trade union circles have been the change in policy of the Associated Society of Locomotive Engineers & Firemen regarding wage claims and the pressing by the National Union of Railwaymen of its claim on behalf of the lower-paid worker. These developments are important in that they show the unions to be more united in their policy than they have been for a long time. Mr. J. B. Figgins, General Secretary, N.U.R., after a conference last weekend of branch secretaries of his union, expressed the opinion, which is now fairly general, that the Government policy of wage-freeze can no longer work. The great improvement in production last year, which had been further improved this year by 9 per cent., with the increase in exports of 12 per cent., made wage advances possible, remarked Mr. Figgins, without the risk of inflationary tendency, and by virtue of this fact a wage advance would not result in any increase in the cost of living, but rather in an improvement in the standard of living of the worker. In an article in *The Railway Review* of June 2, Mr. Figgins writes: "We have been told repeatedly that if there was only increased production then wage advances would be justifiable. This condition has been fulfilled and therefore, as a union, we are submitting to the Railway Executive that we are more than justified in putting forward the application for increases in wages which we have now placed before them." The executive committee of the N.U.R. will define finally its policy in relation to the present application in due course. Meanwhile no announcement has been made by the Railway Executive in regard to its consideration of the N.U.R. claim on behalf of lower-paid railwaymen as a result of the meeting which union officials had with Sir Eustace Missenden on May 26.

Future of Irish Transport

PUBLIC transport in Ireland came under State ownership on June 1, and the board of the new C.I.E., which held its first meeting last Monday, will have no easy task. For some years, the former Coras Iompair Eireann was run at a loss and it will necessarily take time and careful planning before the undertaking can be put on a sound financial basis. Until then it is inevitable that the State should continue to bear the deficiency between the cost of operating the company and the revenue which it is able to earn. During the past 20 years, except for a period when conditions were quite unusual, public transport has been unable either to provide modern rolling stock for the railways or to make good wastage of assets. Shortages of supplies during the war aggravated the position. Also, as was pointed out by Mr. T. C. Courtney when presiding at the meeting on June 5, while every effort will be made to rectify this state of affairs, only by the provision of adequate and economical services, comparable in every respect with the alternative services which can be given by competitors, will it be possible for C.I.E. to provide an efficient and properly integrated system of public transport by rail and road.

The U.S.A. Railway Situation

SINCE the record peacetime year, 1947, the railway situation in the United States has deteriorated persistently. Now and then signs of recovery have appeared, only to flicker out through causes beyond the railways' control. Matters reached such a pass in April that Mr. M. W. Clement, Chairman of the Pennsylvania Railroad, told the San Francisco Chamber of Commerce that the railway situation suggested some of the processes which those interested in State socialism found it advantageous to use. As a result of too much regulation, he said, Government owner hip was being made to seem inevitable, and if the railways did not survive as free enterprise, no other business wou'd. This forthright declaration lends point to an article in this issue which summarises an important statement on the railway situation, submitted on behalf of the Association of American Railroads to a Senate Committee. Under private ownership the U.S.A. railways are slipping into acute financial difficulties, but two years' experience of nationalised British Railways does not indicate nationalisation as the best way to solve the American transport problem.

G.N.R.(I.) Enterprise

THE Great Northern Railway (Ireland), although beset with many problems peculiar to its position as a link between Southern and Northern Ireland—in addition to those which face all railway administrations at the present time—has given numerous examples in recent years of courageous direction and forceful management. The introduction of the now well-known "Enterprise" express service between Dublin and Belfast was part of its policy to encourage passenger travel by providing attractive amenities, and overcoming some of the disadvantages of cross-border transport. Some time ago, based on its considerable experience of railcar operation, it decided greatly to expand the services provided by units of this kind. The

A.E.C. cars now going into operation set a new standard in Irish passenger comfort and will provide speedy and attractive travel. In introducing the first three-car set last week, Mr. George Howden, the General Manager, to whose persistent refusal to be deterred from introducing improvements to his system by extraneous influences must be placed much of the credit for the new services, paid tribute to *The Railway Gazette* for its advocacy of "shorter trains and more of them." He said he was convinced it was a right approach to the solution of some of the present railway problems.

Overseas Railway Traffics

CANADIAN Pacific Railway working expenses fell by £330,000 during April, and though gross earnings were £118,000 lower, net earnings amounted to £647,000, as compared with £435,000 last year. Gross earnings for the month were £9,928,000, and working expenses were £9,281,000. On the aggregate, C.P.R. gross earnings since January 1 have decreased by £911,000 to £37,654,000, but net earnings at £1,101,000 have improved by £560,000. Canadian National Railways operating revenues for April advanced by £1,207,000 to £14,659,000 and net revenue was £949,000 higher. At the end of 17 weeks C.N.R. operating revenues had improved by £1,549,000 at £53,550,000, and expenses at £59,015,000 were £170,000 higher. A £178,000 deficit in net revenue for the first 17 weeks of 1949 has been succeeded this year by a £5,465,000 surplus. During the fortnight ended May 28 traffics of the Antofagasta (Chili) & Bolivia Railway showed a £25,700 decrease, principally in the first week when there were political disturbances in Bolivia. On the aggregate, receipts, which amounted to £1,247,024, were £152,360 below last year.

Mechanical Handling Exhibition

THE second Mechanical Handling Exhibition was opened at Olympia on June 6, and will remain open until June 17. The exhibits, which cover a floor area of more than 200,000 sq. ft., embrace the latest developments in mechanical handling, and include fixed and mobile cranes, conveyors, and coal and ash handling plant. A noteworthy development is the use of fork lift trucks and pallets specially suitable for transporting goods from warehouses and for stacking in railway vans, so eliminating the use of manual labour. Working exhibits demonstrating the application of the latest mechanical handling methods include the discharge of a railway wagon by tipplers and the handling of cereals by pneumatic suction, as well as the use of fork lift trucks. The exhibition is of particular interest at the present time, as an Anglo-American Freight Handling productivity team has recently left for America to study mechanical handling methods; reference to the visit was made in our June 2 issue. At the Convention, held concurrently with the Exhibition, well-known authorities and large-scale users of mechanical handling will discuss its application to many different industries. The papers, brief reference to which was made in our May 26 issue, will cover mechanical unloading of rail wagons and mobile rail type gib cranes and derricks.

Liverpool Street-Shenfield Electrification

THE smooth changeover from steam to electric traction on the Liverpool Street-Shenfield suburban services of the Eastern Region of British Railways since the first trains were brought into use on September 26 last, has been no small achievement, and one of which the operating and engineering staff are justly proud. There were teething troubles, naturally, but no serious difficulties have been experienced. Despite the problems of interspersing the peak service of 18 trains an hour with the numerous empty carriage trains around Liverpool Street, and the heavy main-line traffic using the same lines, they have now settled to a steady rhythm of working with an almost 100 per cent. punctuality record. In a short paper presented to the Railway Students' Association, London School of Economics & Political Science, when members visited the line on June 3, Mr. A. R. Atkinson, of the office of the Chief Regional Officer, Eastern Region, said that there had been a considerable increase in the passenger originating journeys and receipts—which was a safe indication that the travelling public appreciated the new services.

Ulster Transport Buffet Car

LAST month the Ulster Transport Authority placed in service a buffet car which is attached to express trains running between Belfast and Londonderry. This journey of 93 miles is accomplished in 2 hr. 15 min. with five intermediate stops. For the car body, which is of composite construction and is described and illustrated elsewhere in this issue, teak is extensively used. The body is mounted on an underframe of conventional design. The layout provides a buffet compartment for the use of passengers who require a snack only, and also a dining compartment to seat 15. The interior decoration, with the exception of the kitchen, is comprised mainly of Australian walnut veneer on 14 S.W.G. aluminium sheets, finished with cellulose, while the buffet counter has been provided with a hand and foot rail of aluminium. The space between the body side and interior panelling is filled with fibre glass with a view to reducing heat losses during the winter months and will tend to keep the car cooler during the summer.

Main-Line Trains at Broad Street

AN interesting traffic development during Easter to relieve congestion at Kings Cross was the diversion of certain Eastern Region main-line trains serving points as far distant as Cambridge and Peterborough into Broad Street. The summer timetables show that this is to be a regular practice; on Saturdays the 4.23 p.m. from Kings Cross to Royston, the 5.39 p.m. to Baldock, and other trains, will start from Broad Street, with corresponding up workings, while on weekdays also the 6.50 a.m. from Baldock, 6.48 a.m. from Royston, and others will be diverted into the City terminus. In all its history Broad Street has accommodated only one regular long-distance train, the short-lived "City-to-City" express, a four-coach formation, including restaurant car and typewriting facilities, which the former London & North Western Railway put on in February, 1910, between Broad Street, Coventry, Birmingham, and Wolverhampton, as a counterblast to the 2-hr. London-Birmingham service which the Great Western Railway was to inaugurate with the opening of the Bicester cut-off the next summer. The former enterprise did not succeed, however, and the train was withdrawn after a short life. In the 1930s the L.M.S.R. tried the experiment of running a service between Fenchurch Street and the Tilbury line; this also failed to attract sufficient patronage. With a unified railway system more adequate use might be found for this useful terminus in the heart of the City.

91-ft. Span Slewed 118 ft. in 30 min.

IN a recent realignment of the Chicago, Burlington & Quincy double-track main line in Iowa, a bridge consisting of twin single-track 91-ft. plate-girder deck spans, one carrying each track, was moved from the old to the new alignment at a point where they were 118 ft. and at an angle of 13 deg. apart. The span under the eastbound track was first moved, single-line working being introduced for 2½ days while it was out of service. Preliminary to the move a runway supported by timber falsework was constructed to carry each end of the span, mounted on rollers, from the old to the new site. The 70-ton span was then jacked up, to allow the runways to be extended under it, and lowered on to the rollers arranged in frames of three, so that it could be hauled transversely by means of block and tackle attached at each end, power being supplied by a tractor pulling each cable. At the centre of each runway a slight curve was introduced to provide the 13-deg.

change of angle in the alignment of the span in transit. On arrival at the new site, the span was again jacked up and, the rollers and runway extension removed, it was finally lowered on to its new bearings. The move was completed in 30 min., and the span came to rest only ¼ in. out of position longitudinally. Five days later the westbound span was similarly moved.

Ghat Improvements on the G.I.P.R.

THE General Manager of the Great Indian Peninsula Railway has sent us a description, drawings and photographs of the £1,500,000 improvement works in progress on the Thull and Bhore Ghat inclines, forming parts of the north-east and south-east main lines of the system. In our issue of January 21, 1949, we gave a brief outline of the tunnel-widening in hand on the Thull Ghat, but the entire project includes similar widening on the Bhore Ghat, extensive diversions of one of the double-line tracks—largely in new tunnels—and conversion of tunnels into open cuts, as alternative methods used to increase the track-spacing from 12 ft. to 15 ft. 6 in. or more. The heavy electrified traffic over both inclines made it impossible to allow of occupation line-blocks if the tracks were gauntletted and single-line working resorted to, and so an adjustable arched steel staging was devised, from which the rock-drilling could be carried on under, and without interference with, double-line traffic.

Cantilever Staging for Tunnel Widening

THE tunnel-widening on the Thull Ghat, referred to in the previous note, was carried out on both sides of the line, with the aid of an arched steel staging spanning both tracks and without interfering with traffic. On the Bhore Ghat section, however, most of the tunnels had to be widened on one side only, and for this purpose another type of steel staging was designed to run on a special track along the side of the tunnel being widened, and to stretch out to beyond the centre of the tunnel crown as a cantilever balanced by kentledge. This cantilever staging and its use, as well as the method by which two tunnels were demolished to allow of a wider open cut in each case, are also described in the article. One of the illustrations of the cantilever staging just entering a tunnel gives a good idea of the precipitous mountain-sides along which these double broad-gauge main lines were constructed as long ago as the 1860's. The complications entailed by the presence of everhead electric contact wires in all the 37 tunnels on both ghat sections should be borne in mind, seeing that most of the work is being carried out while trains are running.

Welded Rails

THE intentions of the Elgin, Joliet & Eastern Railroad in regard to welding the whole of its main-line trackage, as recorded on page 558 of our issue of May 19, brings the historical development of such construction back to the full circle, for welded rails for a whole line were proposed in the very early days of railways; and even the welding itself must have approximated in principle to the most modern methods. John Birkinshaw's patent specification of 1820 relating to his rolled wrought or malleable iron rails, says: "And, in order still further to remedy the evil arising from the joint of the rail-road, I propose to weld the ends of the bars together as they are laid down, so as to form a considerable length of iron rail in one piece." Birkinshaw went further—indeed, up to the present Elgin, Joliet & Eastern proposals—for in 1821 he wrote of rail welding: ". . . by this means, making one continued rail the whole length of the road without any joint whatever." Here, then, is the foundation of all modern rail welding. Whether welding of rails was ever practised at that time to any considerable extent is doubtful, but the defects of rail joints were so well appreciated at the time that yet another modern device, the lapped rail joint, was introduced by the Stockton & Darlington Railway within a short time of its opening, and in a more primitive form at Walbottle at least 20 years earlier.

Integration

THE processes through which industry passes on more than one occasion have resulted in bringing into wide usage words which achieve a particular meaning associated directly with a period or a series of events. Many will remember "rationalisation" of the inter-war period; in transport for many years "co-ordination" held sway. More recently, and especially since the passing of the Transport Act, 1947, "integration" has become the keystone of official policy. The frequency with which it is used sometimes may occasion suspicion as to whether familiarity with the sound of the word may not have bred contempt for its meaning. There can be little doubt that it is used frequently without due regard to all the implications of a careful assessment of its true meaning. Whether the Parliamentary draughtsmen who were responsible for the Transport Act worked with a dictionary by their sides is doubtful, but they must shoulder in large part the responsibility for the prominence which the word has achieved. They declared that among the general duties of the Commission should be the provision of a "properly integrated system of public inland transport and port facilities within Great Britain."

Dictionaries vary slightly in their definition of integration, but broadly they are in agreement in that it implies the act of making entire, or the making up of a whole by adding together or combining separate parts or elements. It is possible that the compilers of dictionaries did not envisage the application of the word to so broad an industry as transport. Since it figured in the British Transport Commission's remit, a good many attempts have been made to reduce its implication to a practical basis. Fairly obviously, it differs considerably from co-ordination, which has a more limited meaning, and which implies a sense of equalisation and, as such, can be applied to otherwise separate and distinct entities. The Chairman of the British Transport Commission has described integration as co-ordination raised to a higher power, which although having a nice, scholarly sound, hardly seems to embody the practicalities of the matter as applied to transport.

Mr. J. R. Pike, Chief Rates & Charges Officer of the Railway Executive, made an attempt to define both co-ordination and integration recently, and suggested that in some ways they might be likened to the respective characteristics of a mixture and a compound. In the case of a mixture, the two or more elements or substances involved retain their individual properties, whereas a compound is a substance produced by the union of two or more substances in such a way that the individual properties of the constituents disappear. In other words, the essential difference is that in one case—a mixture or co-ordination—the respective elements retain their original identity, whereas in the second—a compound or integration—they are combined to produce a new substance.

It is in this combination to produce something new that weakness is to be found in the use of the word integration. Mr. R. H. Wilson, Comptroller of the British Transport Commission, as we show elsewhere in this issue, has tried to get over the difficulty by suggesting that integration as it applies to transport has various aspects. He talks of the "integration of the higher command," the "integration of ownership," the "integration of the general plan" and "the integration of the actual operation." He might have added, but perhaps he felt that the Transport Act had forestalled him, "the integration of the system."

Some of these things obviously can be subject to integration in its real sense. Unity of ownership is comparatively simple. It is when thought is given to the integration of transport on the ground that the difficulties become apparent. How, for example, does one attempt to integrate or fuse railways with road or railways and road with canals? The services they render can be co-ordinated, but that is a different matter. It would appear that integration in the practical sense, from the point of view of the public, trader, and indeed the ultimate link in the chain of operation, must always be something less than complete, and at the best must be a compromise with the meaning of the word.

True integration would imply very great changes in the

present system of organisation in transport as it obtains at present. Integration of transport would mean at the least the complete fusion of the present six Executives. There would no longer be railway officers of various kinds or road or dock staffs. In effect all would be transport men. At the highest flight of fancy, presumably they would all be equally knowledgeable and adept in all branches of transport. But even if this were achieved, and it seems very unlikely, there would still remain the physical integration of transport services and means of movement. In the ultimate analysis, there will probably always be some members of the public or traders who will prefer to travel by train, or to send their goods by road, for reasons which may seem good enough to them individually, even though their desires may not seem logical or commendable to the British Transport Commission, or whatever body in the future may be charged with the provision of public transport. So long as any freedom of choice remains to the public, that will remain a factor which will have its repercussions on whatever services are available

One is forced back to the conclusion, therefore, that implementation of the injunction to achieve integration must fall short of completeness in so wide and diverse a matter as British transport. There is a long way to go yet before integration is achieved in the various degrees in which it is possible in the industry. Possibly by the time that all that can be done has been brought into effect, some other word will have come into fashion for dealing with the parts which will remain over.

Wagon Standardisation and Design

IN our issue of April 21, in dealing with the paper read by Mr. C. A. Gammon to the Institution of Locomotive Engineers on April 19, we referred mainly to the historical aspect of wagon design. Since nationalisation, the preparation of drawings and specifications has been carried out in each Region under the direction, and with the co-ordination, of the Member of the Railway Executive for Mechanical & Electrical Engineering, Officers for Design, and Officers for Carriage & Wagon Construction. Referring to underframe design, Mr. Gammon said that the standard timber underframe of oak or jarrah was, until ten years ago, usually preferred, owing to the equipment available in workshops, and the relative ease of manufacture and repairs.

Timber, however, had its limitations, and the decision to construct coal wagons entirely of steel, and goods wagons with steel frames and timber bodies, is in the opinion of the author a wise one. The former Great Western Railway was a pioneer in the adoption of steel underframes, and, in fact, the Western Region has no mineral or goods wagons with timber frames. The steel frame did not find early favour for general use, one of the principal reasons being corrosion set up by sulphurous moisture from coal, and the alternately wet and dry wood flooring in contact with the members. Trials had been carried out during the last 15-20 years, with anti-corrosive steels and irons, but results were not sufficiently conclusive to justify their adoption as an alteration from mild steel.

The orthodox standard steel frame is of riveted construction, comprising rolled steel sections attached by angle knees, but frames entirely welded have, with the improvements in welding technique, led one Region to adopt this form of construction as standard. Until some 20 years ago, all wheels were of the tyred pattern. During the past 20 years, however, a solid rolled one-piece, one wear wheel of which the tyre is an integral part, has been developed, and, while not completely superseding previous designs, has been extensively used and has been standardised for British Railways. Such wheels are not re-tyreable, and should be discarded when the tyre portion reaches minimum dimensions, which will probably occur after 30 years of life. Regarding axles, until recently designers endeavoured to limit the stress to 20,000 lb. per sq. in.; it was known, however, that axles under tank wagons having a maximum laden weight of 24 tons were stressed at the wheel seat to 23,500 lb. per sq. in., with no unsatisfactory effects. With the increase in capacity of modern all-steel mineral wagons to 16 tons, the laden weight of which is also 24 tons, axles as used for the tank wagons referred to, with 9-in. × 4½-in. journals and 5¾-in. dia. wheel seats, were adopted, the stress being somewhat lower, namely, 22,700 lb. per sq. in. behind the wheel seat.

The number of designs of axleboxes has been legion. For years, said Mr. Gammon, there had been differences of opinion as to the merits of cast iron and cast steel, and whether a two-piece or open-fronted type was preferable. Perhaps the most important feature introduced with the divided axlebox was the inclusion of an ink-well type oil chamber, which could be filled from the exterior. This was a necessity imposed by an extension of the mechanical discharge of wagons by side, rotary, or end tipping. An improved design was produced in 1938, incorporating spigots in the upper section locating in a hole in the lower section, which affords greater resistance to misalignment of the two halves. As recently as 1948 it was decided, after extensive trials, that dust shields, which had always given much trouble, should be dispensed with. The trials indicated no difference in performance in the condition of axleboxes with and without shields fitted to the same wagons. This design has been adopted by British Railways as the standard for cast-iron axleboxes.

In 1945, iron founders were, for various reasons, unable to meet post-war requirements, and a cast-steel open-front box was designed, having an open base in which is housed a removable oil container made from 14 S.W.G. pressed-steel plates fabricated by welding and having the orthodox "ink-well" tipping feature, using the standard lubricating pad. Its high cost led to the development of an all-welded box in which the sides, base, and back of steel plates and a drop-stamped top forming the spring seat are welded together. The axleguard grooves are of rolled or forged section, and interior lugs resist the bearing thrust being welded to the side plates. The box is equipped with a removable oil container, and incorporates a standard lubricator, dust shields being dispensed with. It is the latest British Railways alternative standard and is considerably lighter in weight; 84 lb. as compared with 150 lb. in the case of a cast-iron divided box, representing a saving of 3 cwt. per wagon.

In 1947, a new design of axleguard, comprising two separate plates riveted to the solebar and tied at their lower extremities by a bridle, has been adopted by British Railways and private wagon owners in forms to meet the requirements of 13 to 16 and 20-ton wagons respectively. Investigation into drawgear design was undertaken between 1943 and 1949, and at the request of the railways static and impact tests were carried out by the National Physical Laboratory with complete arrangements of drawgear, including a steel spring having a capacity of 25 tons under a movement of ⅞ in., rubber springs, and a combination of each type in series. Results indicated the most efficient arrangement to be the steel spring in combination with, but separated by, a steel washer from one standard rubber spring section, closely followed by four standard rubber spring sections. These alternatives have now been adopted as standards, as well as the all-rubber type for renewals on existing steel-frame stock.

Since nationalisation, consideration has been given to formulating a uniform standard van, and it has been decided to adopt a design with hinged doors, incorporating pressed-steel ends, having ⅝-in. thick softwood boards or other suitable materials for the sides. The vehicles will be mounted on standard steel underframes, 17 ft. 6 in. long with a 10-ft. wheelbase, generally fitted with vacuum brake for fast freight working, having a load capacity of 12 tons, with the latest improvement in drawgear, axleboxes, and other fittings. In addition, a vehicle has been designed incorporating shock-absorbing features developed by the former L.M.S.R., and the shock-absorber wagons were described in our issue of August 20, 1937.

Among other types of vehicles for which uniform standards have been agreed are 20-ton goods brake vans, 13-ton low-side wagons, 14-ton rail wagons, 12-ton carriage trucks, 22-ton tube wagons, 13-ton sand wagons, bogie bolster wagons of various capacity, and 8-ton banana vans. Attention is being paid to all-steel mineral wagons and a

standard 21-ton vehicle is going into production in 1951. Alternatives for welded and riveted construction are provided for, and will be 21 ft. 6 in. in length and 9 ft. 1 in. high, and is based on the 16-ton design with which as many components as possible will be interchangeable. Mr. Gammon said that mechanical discharge had increased greatly during the past 20 years, and as a result of joint conferences with tippler manufacturers, standard requirements have been formulated with which tippler plant must comply.

British Transport Commission Traffic Receipts

THE traffic receipts of the British Transport Commission for the four weeks to May 21 reflect in some measure the increase in freight charges which came into force on May 15. For the period now under review the total traffic takings of the B.T.C. show a decline of only £8,000 as compared with the similar period of last year. Last month the receipts showed a decline of £521,000 as compared with the corresponding four weeks of 1949. Once again passenger takings for both British Railways and London Transport showed a decrease.

British Railways actually recorded a total increase of £38,000 in takings. Revenue from passengers was lower by £550,000 and merchandise and livestock brought in £35,000 less than for the corresponding four weeks of 1949. Receipts from parcels traffic, which showed a small improvement last month, were this time down by £2,000. Minerals traffic yielded £174,000 more, and coal and coke £451,000 more, than they did twelve months ago.

There was again an increase in revenue derived from provincial and Scottish road passenger transport, £84,000 as compared with £31,000, although all sections of London Transport showed declines, amounting to £16,000 on railways, £76,000 on buses and coaches, and £38,000 on trolleybuses and trams, totalling £130,000. Revenue from Inland Waterways was the same at £125,000 and a loss of £4,000 on freight charges was compensated for by increased takings of £4,000 on tolls.

	Four weeks to May 21		Incr. or decr.	Aggregate to May 21		Incr. or decr.
	1950	1949		1950	1949	
	£000	£000	£000	£000	£000	£000
British Railways—						
Passengers	7,461	8,011	— 550	34,953	37,018	— 2,065
Parcels, etc., by passenger train	2,277	2,279	— 2	10,818	10,651	+ 167
Merchandise & livestock	6,573	6,608	— 35	31,660	32,224	— 564
Minerals	2,478	2,304	+ 174	11,876	11,594	+ 282
Coal & coke	5,869	5,418	+ 451	27,780	26,718	+ 1,062
	24,658	24,620	+ 38	117,087	118,205	— 1,118
Road Passenger Transport, Provincial & Scottish—						
Buses, coaches & trolleybuses	2,665	2,581	+ 84	12,284	11,982	+ 302
London Transport—						
Railways	1,120	1,136	— 16	5,536	5,611	— 75
Buses & coaches ...	2,431	2,507	— 76	11,622	11,814	— 192
Trolleybuses & trams ...	840	878	— 38	4,081	4,192	— 111
	4,391	4,521	— 130	21,239	21,617	— 378
Inland Waterways—						
Tolls	59	55	+ 4	269	269	Nil
Freight charges, etc. ...	66	70	— 4	316	325	— 9
	125	125	Nil	585	494	— 9
Total	31,839	31,847	— 8	151,195	152,398	— 1,203

For the 20 weeks of this year the traffics of the British Transport Commission show a decline of £1,203,000, of which £1,118,000 has accrued on British Railways. Rail passenger receipts are lower by £2,065,000 and at the same time merchandise takings are down by £564,000. Parcels by passenger train are up by £167,000, minerals by £282,000, and coal and coke by £1,062,000. However, though the increase in freight charges has stopped the decline in British Railways receipts in the latest four-week period, the passenger receipts are down in the first 20 weeks of 1950 by 17 per cent. compared with 1948, and merchandise by 6 per cent. For the same period mineral receipts are up by 7 per cent. and coal by 10 per cent., showing that the railways are more and more dependent on heavy traffic for their revenue. Again compared with 1948, the revenue of London Transport is down 3 per cent. for the 20 weeks.

PERCENTAGE VARIATION 1950 COMPARED WITH 1949

	4 weeks to May 21	20 weeks to May 21
British Railways :—		
Passengers	— 6·8	— 5·5
Parcels	—	+ 1·5
Merchandise & livestock	— 0·5	— 1·4
Minerals	+ 7·5	+ 2·4
Coal & coke	+ 8·3	+ 3·9
Total	+ 0·1	— 0·9
Road Passenger Transport	+ 3·2	+ 2·5
London Transport :—		
Railways	— 1·4	— 1·3
Buses & coaches	— 3·0	— 1·6
Trolleybuses & trams	— 4·3	— 2·6
Total	— 2·8	— 1·7
Inland Waterways	—	— 1·5
Aggregate	—	— 0·7

Bridge Construction in Germany in 1949

IN our contemporary *Die Bautechnik*, Herr Ernst, of the German Ministry of Transport, surveys the progress of bridge construction in Western Germany last year. Because of the worsening of the financial situation of the Federal Railways, the rate of progress had to be slowed considerably compared with 1948, and work was confined to the reconstruction of a few large viaducts and the replacement of temporary bridges no longer regarded as safe. As even this minimum programme could not be completed, 15 bridge tracks had to be taken out of service, and severe speed restrictions had to be imposed on 42 other bridges. Many bridges not damaged during the war are deteriorating for lack of maintenance.

At the end of 1949 a total of 2,112 of 2,472 damaged or destroyed bridges had been reconstructed; this number includes 959 bridges permanently reconstructed, 201 bridges semi-permanently reconstructed, and 952 bridges temporarily reconstructed. Since reconstruction work began in 1945, temporary bridges to the number of 732 have been replaced by permanent bridges. There are still 660 bridges with temporary superstructure which must be replaced during the next few years. Of the 143 bridges still out of service most are situated in the Cologne District. Nine out of 14 destroyed railway bridges over the Rhine, nine out of eleven over the Weser, 23 out of 24 over the Main, and all the 13 Danube bridges were again in operation at the end of 1949.

The survey gives details of the reconstruction of nine important bridges and the replacement of temporary by permanent structures for 13 other bridges. Among the nine bridges which, in 1949, were reconstructed for the first time, is the 1,886-ft.-long Rhine Bridge at Duisburg. Due to heavy river traffic the main span of 620 ft. had to be constructed in cantilever fashion. Some 4,200 tons of steel could be re-used and approximately the same quantity of new steel had to be added. The bridge still carries only a single line.

Bridges where temporary structures are now being replaced by permanent structures, include the fine viaduct at Bietigheim which carries the Stuttgart-Mühlacker Line across the Enz Valley. This viaduct, which is 96 years old, is 938 ft. long and reaches a maximum height of 115 ft. above the valley. It consists of 21 masonry arches of 37¼ ft. clear width. The viaduct suffered considerable damage and was temporarily repaired by American army engineers who used steel superstructures and piers. Further repairs were carried out by the German Railways. For the final reconstruction a new temporary bridge was constructed on the downstream side of the viaduct. Other important bridges in the category are those over the River Main at Heidingsfeld, over the Rhine at Mainz, over the Werra at Oberwieden, the bridge over the Weser at Dreye, and the bridge over the Ruhr at Fröndenberg.

LETTERS TO THE EDITOR

(The Editor is not responsible for the opinions of correspondents)

Sir Eustace Missenden's Offer

June 3

SIR,—Just to complete the correspondence in your paper, this is to say that I shall be pleased to meet Sir Eustace Missenden, and have so informed him.

Yours faithfully,

EX-GENERAL MANAGER

[Previous correspondence on this subject, which arose mainly from a criticism of the freight rates increase, appeared in our May 26 and June 2 issues.—ED., *R.G.*]

The Late Mr. E. T. MacDermot

May 30

SIR,—It is with deep regret that I learn from *The Railway Gazette* of May 26 that Mr. E. T. MacDermot has passed away.

I was in close contact with Mr. MacDermot during the period he was writing the "History of the Great Western Railway," and, inasmuch as the history was commissioned by the company and all official records were open to him, I feel that the statement that the work was in no sense an "official" history may detract from its value as an authoritative history. It is true that Mr. MacDermot was given an absolutely free hand to state the facts impartially, which he did.

The inception of the history was due to Sir Felix Pole, who for several years—even before the 1914-18 war—had advocated such a work, and eventually, as General Manager of the Great Western Railway, arranged for its production.

Yours faithfully,

R. HALLIDAY

304, Stoke Poges Lane, Slough

Summer Timetables

May 15

SIR,—Glancing through Table 149 of the London Midland Region summer timetable book, I observe that all up Ormskirk-Liverpool electric services are shown as covering the 1¼ miles between Ormskirk and Aughton Park in one minute flat! Such are the effects of nationalisation—75 m.p.h. stopping trains!

Seriously though, I must say that I like the larger form of this book, and hope that this size will be adopted eventually by all the other Regions. I also observe that all Bakerloo timings are now shown in the London-Bletchley table.

Yours faithfully,

P. D. CLIFTON

4, Holly Drive, Maidenhead

May 30

SIR,—The Publicity Department of British Railways (Eastern Region), in its endeavour to bring to the notice of the public the alterations in its Summer Timetables, has excelled itself this year in so far as waste of material and inaccuracies are concerned.

On May 22, I received 25 quarto sheets, only one side of the paper being used, and the layout thereon wasteful. It is the considered opinion of three duplicating firms that the information given could have been contained in eight sheets at the most.

Some of the information contained is most illuminating, for instance, the "Yorkshire Pullman" now leaves Harrogate at night and takes 16 hr. 42 min. for the journey to Kings Cross. It will have to keep better time than previously, as the layover time at Harrogate is but 21 min. daily now; arrival 9.54 p.m., departure 10.15 p.m.

Under the heading "The 10 a.m. series of trains will leave Kings Cross as under," the would-be traveller is given a list of 28 weekday and eight Sunday trains ranging in the hours of departure from 9.20 a.m. till 11.30 p.m., with a 12.05 a.m. thrown in for good measure on Saturdays. Dukeries Junction has been closed, so official notices state, yet the bewildered traveller is informed that the 12.45 p.m. Grantham to Doncaster will omit calling there on Fridays and Saturdays.

One whole page is headed "New Named Trains" and the only train mentioned on it is the "Master Cutler," now nearly three years of age and a product of L.N.E.R. days. It is noted that this train is again slowed 10 min. in the up direction on Saturdays.

Half of another page is given to the "South Yorkshireman" which is similarly described, with inaccuracy, as new. The Mansfield-Clacton service is described twice in the headings as Saturdays only. The only train shown leaves on Fridays. Under the heading "Additional Trains," one is included that has the words "will be discontinued" against it.

On May 26 a further three sheets from the same source arrived with details of Whitsuntide traffic details. One sheet would have sufficed for the information given.

Yours truly,

V. BOYD-CARPENTER

Highland House, Worksop

Restoring Railway Supremacy

May 13

SIR,—Mr. Bottomley's complaint in your May 12 issue about railway services in the Bradford area serves to stress a gravely disadvantageous factor in present national life—the lethargic state of the railways.

Probably few persons would now seriously attempt to turn the clock back and revert to the previous individual systems, but would rather hope to strengthen the railway position by exploiting all the benefits that can be found by having a unified system. What is wanted is a new loyalty to the national body which, if it is to command widespread attention, must be engendered by brilliant direction no less than that shown in conducting a difficult military campaign.

Consider railway advertising in the Press. One sees numerous notices dealing with excursions at cheap rates, but when is it announced that express goods services reach important centres in twelve or twenty-four hours and that traffic is eagerly sought, carefully handled, and guaranteed "on time"? Never, except in the most general terms. Simply, one assumes, because under present direction and circumstances no one will guarantee such a thing. Birmingham to Slough is four to five days nowadays, it seems, and doubtless dozens of similar examples can be quoted.

The same argument applies to passenger services, and although queues may regularly be seen waiting for buses adjacent to a railway station, as at Windsor Central, it never occurs to the official mind to attempt to tell these people that trains exist for their benefit and the times they run at, in an effort to sell local rail transport.

The same spirit condones dirty stations with filthy seats, ledges inches deep in grime, when porters and station staff may be seen largely unoccupied for periods between trains. Has it occurred to anyone that if the station staff won't clean the station, who on earth is going to? And how about locomotive crews taking a little personal interest in their mounts? If officials wonder why traffic is lost, one answer is that there are far too many horribly dirty stations, locomotives, and coaches—far more than need be if the total labour force of the railways were used to the best advantage in maintaining cleanliness. But how can you expect results if there is no inspiration from higher up to command a railway worker's loyalty to "muck in" and give a hand to put things right, and keep them there?

What effort has been made since the war to design and use a light, efficient, and attractive self-contained unit for

branch traffic? There seem to be plenty of funds for the expansion of mixed-traffic classes, which must often spend much time hauling lightly-loaded trains, but never any attempt to get down to the cheapest form of transport, the one man-driven railcar. Is it because there lingers an abhorrence of any prime mover that may prove incapable of moving a heavy train occasionally, even if that event should occur rarely? On that argument, any bus route that occasionally demands three double-deckers instead of one, should never risk running less than a 150-seater bus!

Surely someone can design a steam-fired, one-man-driven coach capable of pulling a trailer when required, produce some "sensible" regular-interval timetables and reasonable day return fares, and combine the effort with additional rail-level halts wherever practicable, to make an effort to put the railway where it belongs—at the head and not, as so often, the tail of local transport.

E. V. CLARK

11, Frances Road, Windsor

Japanese Railway Wagons

May 29

SIR,—The article on Japanese railways by Colonel Howard G. Hill in the May 26 issue was most interesting; some of the facts, the age of engine drivers, for example, were astonishing. Two statements were of particular interest to me, namely: "All rolling stock is equipped with automatic couplers and Westinghouse automatic air brakes . . ." and, "Most of the 119,000 goods vehicles are four-wheel." It brought to mind that the Japanese converted 55,000 goods wagons from non-automatic to automatic couplings in 24 hours some years ago.

I am wondering if any of your readers would care to supply details of the two-axle wagon stock? In particular I would like to know the overall size, the amount of overhang and the capacity of the wagons. At the same time I would be glad of similar details of any existing two-axle wagons of 4 ft. 8½ in. gauge fitted with automatic couplings; there may be some in Australia.

Yours faithfully,

G. RICHARD PARKES

90, Serpentine Road, Wallasey

Limitation of Railway Speeds

May 15

SIR,—I have to apologise for having puzzled Mr. Thomlinson as appears from his letter of April 19, published on page 535 of your issue of May 12. The speed I meant to propose was 90 m.p.h., not 60 m.p.h. Unfortunately, I overlooked a typing mistake and so the speed remained at a mile-a-minute instead of being advanced to a mile-and-a-half a minute.

Although I am therefore in full agreement with Mr. Thomlinson in the matter of speed I completely disagree with him as to the proper arrangement of the seats, or better, "rooms" in coaches. It is a question of using the great capacity of a railway to the best advantage. If the passenger trains now running were always full and so could be supplemented by more trains up to the capacity of the track and stations, I believe there would be no trouble with the railways. As it is, those trains are not running to full, not even to half capacity.

Passengers can be attracted and diverted from the road by speed and comfort. Difference in speed alone is not always decisive if the slower coach on the road is more convenient and cheaper. That real comfort matters can be seen from the success of sleeping and restaurant car services. What people seem most to detest is being bound to a seat in a compartment. Crowding as such does not matter as long as a kind of free movement about is still possible.

I had the practical experience last year in Cornwall. The last part of the journey was made in a short train of a few coaches, of which one had an empty luggage compartment. The whole time people were crowding into this not very inviting "room" and it was a pity that not even a few chairs were available. Therefore I still think that railway coaches and trains, which for technical reasons should be the cheapest means of mass transport and for physiological reasons have double the speed of road vehicles, should be made up as a sequence of rooms; there are already such trains in existence. There should be special compartments for luggage, without any superfluous luxurious equipment but with extra space for stretching your legs without incommoding other fellow passengers.

Another problem is the necessity of providing for changing from one train to another or from railway to motorcoach and *vice versa*. This is a question of arranging stations and preparing timetables in co-operation with road transport. Speed and comfort come first.

Yours faithfully,

W. JACOBSOHN

76, Elgin Crescent, W.11

Diversions on Four-Track Lines

May 9

SIR,—The Surbiton signalmen seem to be acquiring notoriety in your columns for their apparent antipathy to steam trains. As a local enthusiast, I offer some explanations.

Surbiton box is the point where the order of arrival in Waterloo on the up fast line is mainly determined. It obviously assists working at Waterloo if trains arrive in their correct order, and a train ahead of its path in such a congested area can be as unwelcome as one running late. Most of the suburban electrics have only about 10 min. to turn round at Waterloo, and in the case of the Guildford electric which was placed in front of Mr. Haines's Bournemouth express, the margin is only 7 min.

This is not to say that many irritating delays do not occur; one Saturday a few months ago the up "Atlantic Coast Express" running several min. early was held in Surbiton Station while two electrics in succession came in and preceded it up the fast line—surely enough to dishearten the keenest driver!

Most of the delays occur where a steam train is due a few minutes behind an electric, for example, 12.16 p.m. and 12.20 p.m., 2.16 p.m. and 2.19 p.m. The "Bournemouth Belle" and "Devon Belle" are similarly placed, but usually seem to receive special consideration. Before last summer's accelerations the 7.30 a.m. from Exeter and the 1.5 p.m. from Bournemouth West could be almost relied on to stop at Surbiton, but on their present timings they are no longer held up. A similar tightening and overhaul of schedules would end most of the regular delays which still remain.

Yours faithfully,

J. N. FAULKNER

53, Westfield Road, Surbiton

Railway Efficiency

May 20

SIR,—May I add a footnote to my letter of May 14, anent Mr. Robert Bell's letter in your issue of May 19? The fact that train shunting hours are included in U.S.A. figures makes the comparison with the U.K. only the more striking. On the same basis as the U.K., the U.S.A. net ton-miles per train engine hour would be greater than 19,153, because the divisor would be less. Total ton-miles in themselves mean nothing, as the following comparisons show:—

1948	London Midland Region (thousands)	Western Region (thousands)
Total net ton-miles	7,882,081	3,847,987
Net ton-miles per:—		
Train engine hour	989	1,176
Total engine hour...	557	525

It is not so much the volume of traffic as the *shaping* of it that counts; Mr. J. A. Kay, in the early 'twenties, grasped that principle firmly in relation to concentration of marshalling.

Yours faithfully,

FREDERICK SMITH

65, Hallowell Road, Northwood, Middlesex.

THE SCRAP HEAP

Safe as Railways

Railway ticket clerks who sell £1,000 insurance policies for a single journey for 6d. report record low business. The reason is that during 1949 there was not a single fatal accident on any of the four Regions of British Railways. In that time 1,000,000,000 passengers were carried by the four Regions. It is the first year for 40 years that no one has been killed travelling in a British train. —*From the "Evening News."*

Cheap Day Trip

Two 12-year-old boys travelled over 200 miles by train and boat on 3d. each. They caught a bus to Waterloo (fare 2d.) after lunch and boarded the Portsmouth train with platform tickets. Then they went to Ryde in the Isle of Wight boat, caught a train to Newport and another to Freshwater, all undetected. When night came they telephoned the police, spent the night in a cell, and after breakfast were put in the guard's van of a Waterloo train.—*From "The Daily Telegraph."*

Census by Rail

Squaw Brook is a hamlet with a population of 13, situated in the forests of Maine on the C.P.R. main line from Montreal to Saint John. The inhabitants are all C.P.R. section men and their families. As the railway is the only means of access, a United States census taken recently had to board a mechanically-propelled maintenance trolley in order to reach it.

Against the Collar

White collar workers in Montreal—who can only wear their white collar one day—blame it on smoke. This is not so, explains an engineering expert from Toronto, who was in Montreal to attend the annual convention of the Smoke Prevention Association of the U.S.A.

A. E. McGruer, an "atmospheric pollution" chaser, said: "It's quite a mistake to believe that all the dust and dirt originates with coal or any other fuel; the largest percentage is vegetable matter, blown by the winds. As far as the railways are concerned, they only burn about 10 per cent. of the coal burned in Montreal, so they can't be as responsible for this nuisance as people think they are."

Centenary of a Liverpool Station

The now-forgotten terminus of the Lancashire & Yorkshire and the East Lancashire Railways in Tithebarn Street, Liverpool was brought into use on May 13, 1850.

This terminus was designed by Sir John Hawkshaw in the Italian style of architecture, and was covered by two large iron roofs. Contemporary accounts described the station as "a magnificent structure, built at enormous expense, second in architectural effect to none in Liverpool." The extension of the railway to Tithebarn Street completed the original project of Liverpool & Bury Railway, which had been opened on November 20, 1848, to a temporary terminus on the site of the present goods depot in Great Howard Street. The construction of the new station involved the demolition of 540 houses and a church, but the works were completed within 12 months. Tithebarn Street Station soon became too small to cope with the greatly increased traffic, and it was demolished between 1884 and 1888, to make way for a larger station, which forms part of the present Exchange Station.

Integration

"The making up of a whole by adding together or combining the separate parts or elements."—*Dictionary definition.*

What does this mean in relation to Transport?

In evidence given before the Charges Consultative Committee on January 20, 1950, Mr. R. H. Wilson, Comptroller, British Transport Commission, said:—

"Integration has various aspects. There is what I call *the integration of the high command*. That has happened, with certain reservations, already. Then there is *the integration of ownership*, which is proceeding. The integration of ownership is not always absolutely essential. There is *the integration of the general plan*. That involves experiments of various kinds, and the Charges Scheme is one of the elements there. There is *the integration of the actual operation*; the physical operating can begin in a very minor way already. You can have the common repair depots, but actually to begin to get the integrated system which I think is conceived under the Act I have always regarded as at least a ten-year operation. It is without any doubt a fantastically large operation."

United States census-taker on the C.P.R. maintenance trolley which he had to use to reach Squaw Brook, Maine (see paragraph above)

Thoughts on the Closing of a Country Branch Line

Unsung, unwept, thou passeth to the shades,
Man findeth thee too slow in modern spate,
Yet, more than thee before have passed that way,
The ages down, as man has wove his fate.

Thou goest the way the ancient pack-horse trod,
With ships and craft the ageless seas have seen,
The barquentine, the coach, man gave them birth,
And passing on forgot that they had been.

I grieve for thee, thou that shouldst pass away,
This restless world hath now no time for thee,
For man is lost for lust of speed and power,
I fear that I, an outcast too, will be.

W. B. S.

OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

RHODESIA

Financial Results

Receipts and expenditure in February totalled £776,440 and £742,312 respectively, leaving a net operating revenue of £34,128 for the month. This brought receipts for the eleven months ended February 28 up to £9,050,285 and expenditure £7,450,564, the net operating revenue of £1,599,721 being £266,468 less than in the corresponding period of 1948-49.

Between October last and February there was a sharp decline in revenue from £923,183 to £776,440. The drop in expenses was roughly one-third of the fall in revenue, the net operating revenue of only £34,128 in February contrasting sharply with that of £135,159 in October last.

According to his monthly *Bulletin*, Sir Arthur Griffin, the General Manager, addressed an economy circular to the staff shortly before he proceeded on overseas leave.

CANADA

C.N.R. Capital Reorganisation

The Commons Railway Committee has urged the Government to give the "earliest possible consideration" to the proposals of Mr. Donald Gordon, President of the C.N.R., for reorganisation of the capital structure of the Canadian National Railways. Mr. Gordon recently outlined to the Royal Commission on Transportation a proposed new organisation that would relieve the railway of some of its heavy interest charges. The committee heard Mr. Gordon for several days in its annual study of the reports of the C.N.R., T.C.A., and Canadian National Steamships Ltd. The committee adopted the various reports, including a total deficit of $46,800,000 in 1949.

ITALY

Electrification Progress

Electric traction was inaugurated on May 18 on the Avezzano-Sulmona section of the 149-mile single-track Rome-Pescara main line. The distance between Rome and Avezzano is 67 miles and the length of the recently-electrified section from Avezzano eastward through the Abruzzi range of the Apennines as far as Sulmona is 40¾ miles.

Between Rome and Avezzano the line was electrified before the war, and it was one of the first lines in Italy to be converted on the 3,000 volt d.c. system. The electrification completed now extends electric traction over the most difficult section of the whole line. The summit of the line, at 2,939 ft., is reached at Carrito-Ortona station, 18 miles east of Avezzano; Avezzano and Sulmona are at altitudes of 2,309 ft and 1,142 ft. respectively. The line was wrecked by the Germans from Cocullo, 3¾ miles east of Carrito-Ortona to Bugnara, 14¼ miles eastward, and again from Popoli, 9¾ miles to the east of Sulmona to Manoppello, 18 miles further east. The progress of reconstruction was recorded in our September 5, 1947, issue.

Milan Underground Railway

An alternative scheme for Milan underground railway is at present being studied by the Milan municipality. According to the new project, one of many evolved so far, the building of the system would be undertaken by a recently-founded joint Italo-Swiss concern known as Società Italo-Svizzera Concessioni Opere Pubbliche (Italo-Swiss Company for Public Works Concessions), in which the Milan Edison Company, foremost in the Italian electricity industry, holds a controlling interest. The new scheme is said to envisage the completion of the first underground line this year.

FRANCE

Railwaymen's Wage Demands

French railwaymen are making urgent claims for wage increases. Due to the large railway deficit, Monsieur Maurice Petsche, Minister of Finance, states that only fr. 2,000 million can be allocated for such increases. A committee, representing the non-Communist unions, maintains that the sum required to meet the men's demands is fr. 5,000 million. After interviews with the S.N.C.F. directors and with the French Premier, Monsieur Bidault, had brought no concessions, the committee broke off relations with the authorities. The Communist-led unions, which took no part in the negotiations, are demanding payment of fr. 3,000 as a monthly bonus

Reorganisation of the Railways

Although no general railway strike is anticipated, some railwaymen are advocating partial strikes in support of their claims. The S.N.C.F. budget forecast in April placed this year's deficit at fr. 93,000 million. The government in January voted a grant in aid of fr. 50,000 million. Payment of taxes reduces this amount of fr. 46,000 million, leaving a net deficit of fr. 47,000 million. If no other resources are available, another government grant to cover the deficit will become necessary. Meanwhile reports are current that a complete reorganisation of the railways is under consideration and that a plan to this effect has already been submitted to the Conseil d' Etat (State Council).

150-h.p. Railcars

The S.N.C.F. is continuing its plan of building railcars. The first units in a series of 51 150 h.p. railcars built by Renault have been delivered at the Laroche-Migennes depot. The prototypes had already been in operation there since early in 1948; by the end of March, 1950, they had run 115,000 and 109,000 miles respectively. The new railcars are to be distributed between the depots of Laroche, Mirecourt, Mont-de-Marsan, Avignon, Orleans, and Evreux.

These railcars have four axles, weigh 17 *tonnes* in running order and seat 66 passengers. There is a compartment for 1,500 kg. of luggage. The motor is a six-cylinder 150 h.p. Renault diesel or a six cylinder 160 h.p. Saurer diesel. Transmission is mechanical with reduction gearing giving a maximum speed of 60 m.p.h. The driver's place is in a raised cabin at one end of the car. The railcar is built to run singly or with a trailer.

The two first railcars of the series (No. 5501 and 5502), last month ran 1,736 miles on a test journey on the South-Eastern, Mediterranean, and South-Western regions following the itinerary: Paris, Moulins, Paray-le-Monial, Lyons, Grenoble, Veynes, Marseilles, Beziers, Toulouse, Tarbes, Mont-de-Marsan, Dax, Mont-de-Marsan, Morcenx, Bordeaux, Paris. The entire tour was carried out without a hitch within the specified times. The run from Bordeaux Bastide to Juvisy was performed at an average speed of 52 m.p.h. with seven intermediate stops.

Twenty-five light two-axle trailers for these railcars will also be delivered this year. This new stock is intended to increase the number of light engines on secondary lines.

WESTERN GERMANY

Single-Berth Sleeping Cars

Single-berth sleeping cars are to be placed in service on the Federal Railways in June, as foreshadowed in our issue of February 3. There are to be three categories of single-berth sleeping cars; second-class sleeping cars of the conventional type, "curtain" sleeping cars with second-class comfort, and third-class sleeping cars.

More Tourist Bureaux Abroad

In addition to the German Tourist Bureau recently opened at New York, similar bureaux are to be opened in the near future in London, Paris, Rome, and Zurich.

IRELAND

Strike Averted

A strike of more than 1,000 staff of Coras Iompair Eireann, due to begin on June 3, was called off, after the management had agreed to reinstate a fireman who had been dismissed for refusing a duty. According to a statement by the Labour Court, the management and the men's union recognised that a strike at the present moment, when the new board of C.I.E. had just entered on its duties, would prejudice the relations between staff and management and add to the difficulties of reorganising the rail, road, and canal services of C.I.E.

The Railway Situation in U.S.A.

An analysis of an unsound financial situation and of the handicaps imposed on the railways

THE American people are beginning to appreciate the significance of the transport problems which have arisen since wartime controls and restrictions came to an end. In April, the President of the Transportation Association of America told members that transport was the key to the preservation of competitive enterprise in U.S.A., and warned them that Government ownership would come if issues confronting the various carrying agencies were not dealt with constructively. This may be an individual and extreme view, but the Senate probably was swayed by similar opinions when it resolved recently to authorise its Committee on Interstate & Foreign Commerce to make a study of domestic and land transport. The Committee is to determine whether existing conditions conform to the policy embodied in the Interstate Commerce Act, and to report on the effect of large expenditures of public moneys and private capital on transport charges and their influence on production costs and prices.

Analysis of Situation

The Association of American Railroads arranged to submit evidence to the Committee. As a first step, Dr. J. H. Parmelee, Vice-President & Director, Bureau of Railway Economics, in April made a general statement on the railway situation; this was to be a background to the reports prepared by other witnesses on special subjects. Dr. Parmelee's statement analyses the trends in railway traffic, revenues, and expenses over the years 1926-49 to explain why the railway companies are beset with financial troubles in this period of high industrial activity. His exposition is almost a manual on transport developments during the past 20 years.

The economy of the U.S.A., says Dr. Parmelee, is built round the railway wagon. The railways are the only true common carriers, moving anything for anybody, in any quantity, in any season, and in any part of the country. Other forms of transport are limited in territory served, in the class of goods conveyed, in ability to expand their services, or by weather. In 1926, the railways handled 76·8 per cent. of the total freight traffic; in 1949 their share was only 61·5 per cent. During the five years 1926-30, gross railway revenues averaged $6,038 million a year; net railway operating income averaged $1,115 million a year, producing an average rate of return of 4·76 per cent. on property investment.

During the four post-war years 1946-49, the corresponding averages were: gross revenues $8,641 million, and net railway operating income $772 million, equivalent to a return of 3·33 per cent. Despite the greater revenue in the post-war period, the railways earned little more than two thirds of the 1926-30 net railway operating income. Their operating ratio rose to 79·6 per cent. from 73·2 in 1926-30.

Another measure of the narrowing margin of profit is the proportion of the average dollar of gross revenue retained as net railway operating income. This proportion fell from 18·5 cents in 1926-30 to 8·9 cents in the four-year post-war period, and dropped to 8 cents in 1949. The ratio of net income, after fixed charges, to gross revenue, fell over the same periods from 12·2 cents per dollar to 5·5 cents, and in 1949 the railways retained only 5·1 cents out of each dollar of gross revenue. With this they had to finance betterment expenditure, to provide for sinking funds and reserves, and to pay dividends. The margin is too small in view of the large investment in railway property needed to produce a dollar of revenue. Even so moderate a decrease as 15 per cent. in traffic and revenues below 1949 levels might wipe out the railways' net income.

Net working capital, or the difference between current assets and liabilities, amounted to $1,659 million at the end of 1945. These liquid reserves were drawn on heavily for capital improvements and shrunk to $645 million by December, 1949. The limit of safety is being approached, because money has to be found at short notice for the purchase of new equipment and to supplement depreciation funds. Capital replacements cost nearly twice as much today as before the war; new works programmes therefore must be financed largely from earnings or by issuing new securities. The railways cannot raise this new capital unless they are earning a high enough return to attract investors. Their financial difficulties are not due to over-capitalisation; and during the past 20 years they have reduced both their funded debt and fixed charges systematically. Their dividend policy has been conservative. Since the war, the rate paid on the total outstanding stock has averaged 3·2 per cent.; in 1949, stockholders received less than 3 cents out of every dollar of gross revenue.

Increased Efficiency

While doing so little for their nominal owners, the railways made impressive progress in operating efficiency. New features were: the adoption of the diesel-electric locomotive; centralised traffic control, which enables a single-track line to carry almost as much traffic as a double-track line; wagon retarders in marshalling yards; air conditioning of passenger coaches; and "in place welding" of old rails, which has added 50 per cent. to the service life of steel rail and reduced its liability to breakage by 75 per cent. The lines have been operated with such care that the safety record in 1949 was the best ever attained.

High costs of operation were due to causes beyond the control of the railways. Wage rates have more than doubled since 1939; prices of fuel and materials are up nearly 100 per cent.; and the tax burden absorbs about 10 cents out of every dollar of railway revenue. Rates and fares have increased at a lower rate than operating costs. In theory, freight rates are 57 per cent. above the pre-war level; but owing to downward adjustments in certain cases to meet competition, the actual percentage advance is less. The ratio of railway freight revenue to the value of the commodities carried was 8·4 per cent. in 1939, but only 5·9 per cent. in 1949, or nearly a third less. Passenger fares are up 34 per cent., mail pay 25 per cent. and express (parcels) charges about 75 per cent. The increases in freight and passenger charges are all below the corresponding increases in general prices. Further, a dollar of railway net earnings has far less purchasing power today than before the war. The railway net income of $438 million in 1949 has a current purchasing power of only $245 in terms of 1935-39 prices.

Subsidised Competition

With railway earnings at depressed levels, how are railways to continue to be the backbone of the U.S.A. transport system? The Brookings Institution of Washington answered this question in an independent study of transport policies published in October, 1949. In emphasising the bad effects of subsidised competition, the study said that any programme designed to promote air, road, and water transport should be framed to give each agency its proper place in the national transport system.

Dr. Parmelee has reiterated these views; he points out that, today, equality of treatment does not exist in taxation, regulation, and promotion. The railways pay taxes on their property, including facilities which are furnished to other forms of transport from public funds. Railways are more restrictively regulated than their competitors. Again, Government promotion supports air, road, and water carriers beyond the point where economic worth would carry them. The difficulty lies in loss of traffic and revenue to competitors who do not bear their full expenses and so can undercut railway rates.

Since Dr. Parmelee laid these facts and opinions before the Senate Committee, a strike of locomotive men on four of the principal lines has disrupted services and diverted traffic to road and air carriers. The railways suffered severely in January and February from the stoppage in the coal-mining industry; the further loss of revenue through the firemen's strike will hit them so hard that 1950 may be a critical year in their history. The case for relieving them of some of their disabilities does not appear to have been overstated.

Western Ghat Improvement Works on the G.I.P.R.

The relocation and re-spacing of tracks on the Bhore and Thull Ghats, G.I.P.R., has involved the construction of 2,095 ft. of new tunnels and the widening of 4,120 ft. of existing tunnels

IN our issue of January 21, 1949, we published a brief article describing the engineering features of the Great Indian Peninsula Railway main line section traversing the Thull Ghat, and the measures that are being taken to remove infringements of standard dimensions on that section. We have now received further particulars of the whole improvement works on both the Bhore and Thull ghats, from the G.I.P.R. administration, and these are given below.

On the Bhore Ghat the works required were more extensive than those on the Thull Ghat, previously described. The Bhore Ghat incline is nearly 17 miles long, as against 9 miles on the Thull Ghat, and the maximum gradients and curves are very similar. Beginning at Karjat, in the 63rd mile from Bombay on the south-east main line from Bombay to Poona and Madras, the Bhore Ghat incline rises from 169 ft. above sea level to 2,033 ft. at Lonavla, in the 80th mile. There are no fewer than 27 tunnels on this ghat section and a number of high viaducts.

On both Thull and Bhore Ghats the line is double throughout, and though the gauge is 5 ft. 6 in., the construction engineers of the 1860s spaced the tracks only 12 ft. apart on the straights. This spacing is barely sufficient for the existing standard 10-ft.-wide rolling stock, and, as the Government of India has now standardised the width of all ordinary rolling stock at 11 ft. 8 in., the minimum track-spacing now in force is 15 ft. 6 in., exclusive of clearances necessary on curves. Widening the track-spacing from 12 ft. to 15 ft. 6 in. is being carried out on both ghat sections, but is costly.

Works Entailed

The nature of the work required may be divided into four main categories:—

(1) Widening—where the topography permits—of existing embankments and cuttings and extensions of bridges on the existing alignment.

(2) Widening existing tunnels under traffic on the existing alignment where geological and physical conditions make this practical and economical.

(3) Conversion of tunnels into open cuts—possible with only two tunnels where the overburden was small.

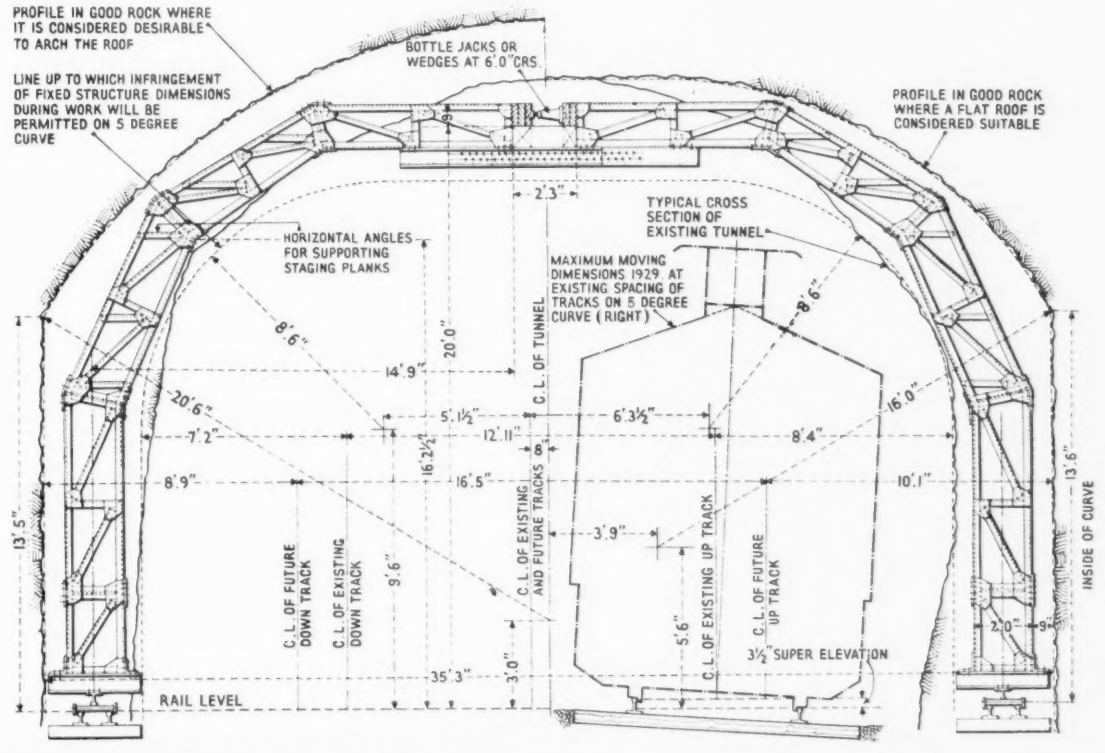
(4) Where the above methods cannot be used, the relocation of one of the tracks has been necessary, and the construction of new diversions round existing tunnels—generally in longer tunnels—has had to be faced.

The works involved in categories (1), (2) and (3) are so closely concerned with the running tracks that they are being carried out departmentally with railway labour, machines, tools and supervisory staff. The construction of the new diversions is being undertaken by contractors. It is significant that of the total outlay involved in these works on both ghat sections, namely Rs. 2,08,00,000, or approximately £1,560,000, some Rs. 1,00,31,700 (£752,000 approximately) are being spent on these diversions.

The following figures indicate the magnitude and distribution of the works:

Number of tunnels being widened: 6 and part of a 7th.
Length of tunnels being widened: 4,120 ft.
Track mileage of new diversions under construction: 6·6 miles.
Number of new tunnels being built: 10.
Length of new tunnels being built: 9,095 ft.
Length of longest new tunnel: 1,804 ft.
Number of tunnels being converted to open cuts: 2.
Length of tunnels being converted to open cuts: 487 ft.
Excavation in rock in cuttings: 415,000 cu. yd.
Earthwork in embankments: 650,000 cu. yd.
Maximum height of bank being built: 124 ft. (from lowest toe to formation).
Depth of deepest cutting being constructed: 68 ft.

The widening of existing tunnels had



Typical cross-section of unlined Thull Ghat tunnel on 5-deg. curve right, where widening has to be done equally on both sides, showing travelling staging in position

to be done without interference with the dense electrified main-line traffic on both ghat sections, and with due regard for overhead wires.

No. 9 tunnel on the Thull Ghat was the first to be widened, and the widening, which is about equal on both sides, has been completed. This tunnel is situated partly on a 5-deg. curve (17½-ch. rad.), and the new sections to which it has been widened are shown in one of our illustrations. A few details of the method adopted for its widening were given in the previous article, but the following additional information on the subject is of interest. The work upon this tunnel is described in detail as representing that carried out in many other tunnels subsequently.

Details of Tunnel Widening

It was first hoped that by gauntletting the tracks and introducing single-line working, it would be possible to widen such tunnels by means of a travelling shield, behind which blasting and mucking operations could be carried out, while affording protection to the gauntletted tracks. This was found to be impracticable, as the Chief Transportation Superintendent was unable to grant occupation periods or "blocks"—in which alone blasting could be permitted even with a shield—if single-line working was introduced.

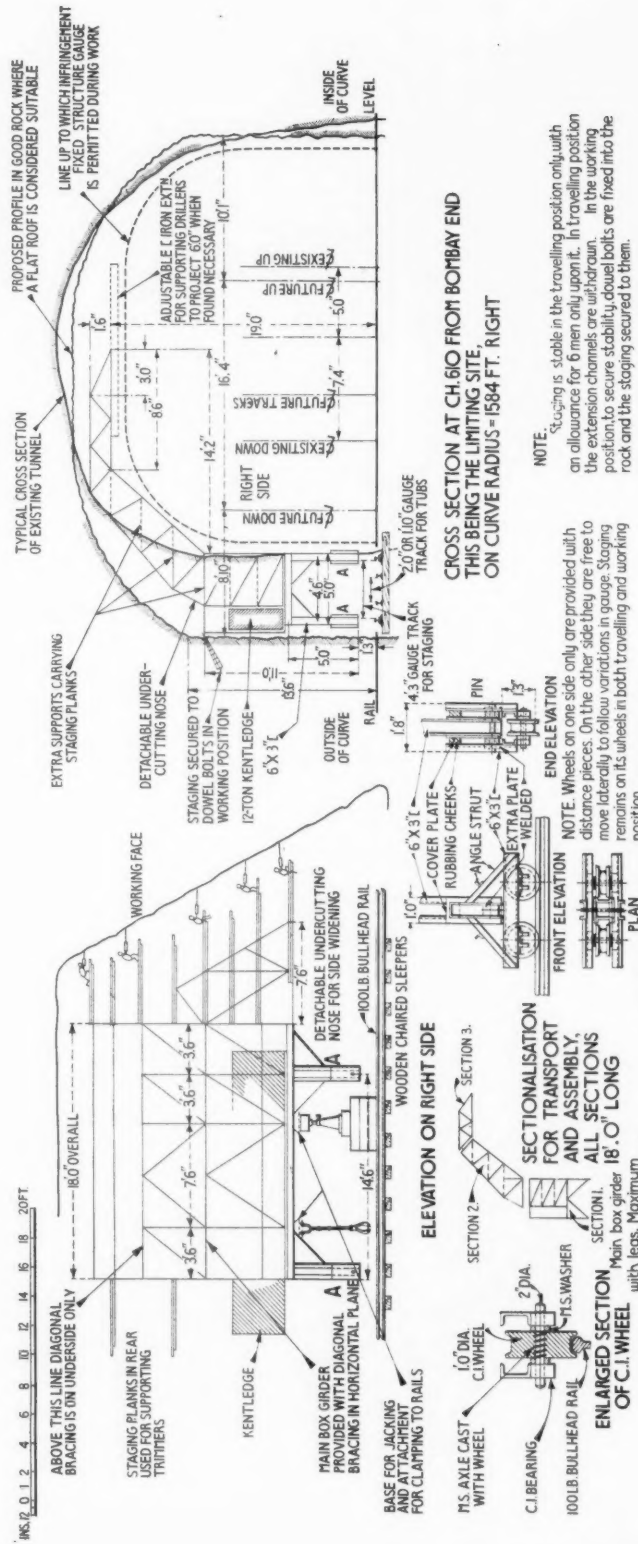
The problem, therefore, was to widen each tunnel without interference with double-line traffic except during periods of occupation blocks. This was done as follows: First, a line was drawn—the dotted line in the diagram on page 651—inside which no temporary structures or scaffolding were allowed to infringe, and outside which all work would have to be carried out, except during periods of occupation blocks.

The next problem was how to support drillers to drill rock for the new enlarged tunnel section. Temporary scaffoldings to be erected and removed again during each block period was considered both impracticable and dangerous for the drillers. It was decided therefore to construct a travelling steel staging which would support planks from which the drillers could operate at any desired point of the new tunnel profile. This staging had to be inside the dimensions of the final tunnel profile, as shown, and outside the dotted line mentioned above, so that there would be no interference with traffic and adequate clearance inside the staging for running trains and for the contact and catenary wires.

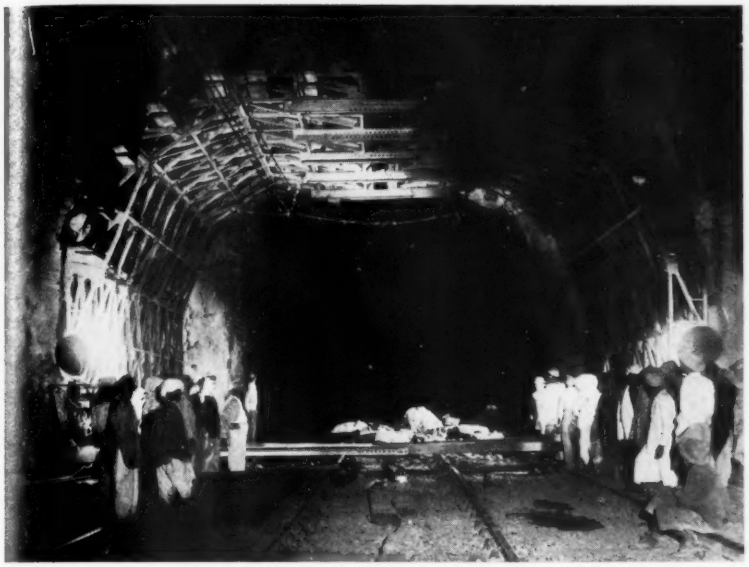
Adjustable Travelling Staging

As tunnel No. 9 is partly on the straight and partly on a 5-deg. curve, the profile of the finished tunnel had to vary to suit both straight and curve within the length of the transition curve. A staging was designed to permit of an adjustment of 2 ft. 6 in. in the distance between the base supports and between the upper centre sections.

The design, as adopted, is illustrated. As the staging simulates a three-pinned


TYPICAL CROSS SECTION OF EXISTING TUNNEL
PROPOSED PROFILE IN GOOD ROCK WHERE A FLAT ROOF IS CONSIDERED SUITABLE
LINE UP TO WHICH INFRINGEMENT FIXED STRUCTURE GAUGE IS PERMITTED DURING WORK
INSIDE OF CURVE LEVEL
ADJUSTABLE C IRON EXTN FOR SUPPORTING DRILLERS TO PROJECT 6.0" WHEN FOUND NECESSARY
EXISTING UP
FUTURE UP
EXISTING DOWN
FUTURE TRACKS
FUTURE DOWN
RIGHT SIDE
EXTRA SUPPORTS CARRYING STAGING PLANKS
DETACHABLE UNDER-CUTTING NOSE
STAGING SECURED TO DOWEL BOLTS IN WORKING POSITION
12-TON KENTLEDGE
OUTSIDE OF CURVE
RAIL
2'0" OR 1'10" GAUGE TRACK FOR TUBS
CROSS SECTION AT CH.610 FROM BOMBAY END
THIS BEING THE LIMITING SITE, ON CURVE RADIUS = 1584 FT. RIGHT
NOTE.
Staging is stable in the travelling position only, with an allowance for 6 men only upon it. In travelling position the extension channels are withdrawn. In the working position to secure stability, dowel bolts are fixed into the rock and the staging secured to them.
4'3" GAUGE TRACK FOR STAGING
PIN
COVER PLATE
RUBBING CHEEKS
ANGLE STRUT
EXTRA PLATE WELDED
END ELEVATION
FRONT ELEVATION
NOTE. Wheels on one side only are provided with distance pieces. On the other side they are free to move laterally to follow variations in gauge. Staging remains on its wheels in both travelling and working position.
PLAN
DETAIL OF DOUBLE FLANGED WHEEL AT 'A'
WORKING FACE
DETACHABLE UNDERCUTTING NOSE FOR SIDE WIDENING
100LB BULLHEAD RAIL
WOODEN CHAIRED SLEEPERS
ELEVATION ON RIGHT SIDE
SECTION 3.
SECTION 2
SECTIONALISATION FOR TRANSPORT AND ASSEMBLY, ALL SECTIONS 18'.0" LONG
SECTION 1.
ABOVE THIS LINE DIAGONAL BRACING IS ON UNDERSIDE ONLY
STAGING PLANKS IN REAR USED FOR SUPPORTING TRIMMERS
KENTLEDGE
MAIN BOX GIRDER PROVIDED WITH DIAGONAL BRACING IN HORIZONTAL PLANE
BASE FOR JACKING AND ATTACHMENT FOR CLAMPING TO RAILS
M.S. AXLE CAST WITH WHEEL
C.I. BEARING
100LB BULLHEAD RAIL
ENLARGED SECTION OF C.I. WHEEL
M.S. WASHER
Main box girder with legs. Maximum height of this section 11'.0"
FTS. 0 1 2 4 6 8 10 12 14 16 18 20FT

Removal of infringements in Bhore Ghat tunnel No.13, with the aid of cantilever-type staging



Thull Ghat tunnel widening showing travelling staging with temporary ties moving forward after blasting

arch, great attention has to be paid to the lateral support of the base while in the working position. While travelling, the two base sections have to be tied together, so this can be done only in a double line block.

Operation Sequence

The operations involved in widening the tunnels were briefly as follow. First, drillers standing on planks laid on and projected from the steel travelling staging, drilled holes about 6 ft. deep in the rock sides of the tunnel. This work could be carried out even without an occupation block—except when trains were actually passing through the tunnel—without in any way interfering with traffic. Such drilling, however, was only permitted up to a certain height called "the danger line," beyond which no drilling was permitted unless electric power in the overhead wires had been previously cut off. The drilling in the roof was done only during the traffic and power blocks, and actual blasting was carried out only during occupation blocks. Normally, two occupation blocks of about 2½-hrs.' duration were available daily. In this manner, the blasting of rock and widening of the tunnel were carried out in stages and continued progressively throughout the length of the tunnel.

This work began in November, 1946, and was completed in August, 1948. Originally only one staging was in operation from the Igatpuri end of the tunnel, but later a second arch staging was also installed at the Bombay end of the tunnel and the widening was carried out simultaneously from both ends with these two stagings. The average progress was 1 r.ft. of widening per staging per day. The operations were hampered due to the difficulty in obtaining and irregularity of occupation blocks, dictated by the extremely heavy main-line traffic on the section.

On the Bhore Ghat most of the tunnels have to be widened on one side only, and consequently a different design of staging for this work was evolved and used. This staging, which is illustrated, is of the cantilever type and the design involved the use of rail kentledge, amounting to about 12 tons, to counterbalance the overturning tendency in the staging due to its cantilever design. This staging runs on a 4 ft. 3 in. gauge track along the side of the tunnel that is being widened. When rock-drilling and other work is in progress on this type of staging, it is secured additionally by dowel bolts let into the rock side of the tunnel. A daily progress of 2 ft. of widening has been maintained with this staging.

Conversion to Open Cuts

Only two tunnels, both on the Thull Ghat section, could be converted into cuttings, namely tunnel No. 1, 402 ft. long, and tunnel No. 8, 85 ft. in length. Work on the latter has already been completed; it was carried out in different phases as follow.

The future cutting top-width was marked on the hill top over the tunnel, taking into consideration the position of the future tracks, adequate side clearances, side drains on both sides, and allowance for side slopes in the future cutting. Removal of the soft portion of the over-burden was carried out by hand excavation until rock was exposed. The overburden in rock was then carefully removed by blasting under occupation blocks, when electric power was also cut off. This process was carried out until the rock over the crown was reduced to 8 ft. over the lining. The remaining 8-ft. layer was carefully cut away in slow stages by blasting with small charges and by removing with paving breakers, until only the masonry lining remained to be disposed of.

Crane-and-Cradle Demolition

The removal of the masonry arch lining was the most intricate and delicate operation, as it had to be carried out without interruption to traffic and with due regard to the safety of life and railway equipment.

This was done by means of a cradle specially designed and slung from a crane, as illustrated. The cradle itself

Cantilever staging in position just inside tunnel No. 13 (Bhore Ghat) for widening of tunnel on "down" side. This view gives an excellent idea of the precipitous hillsides on the ghat sections

is a large hook with a timbered platform measuring 5 ft. × 6 ft. and supported on cross girders; it is designed to suit the curve of the intrados of the arch lining and it engages voussoirs and lifts them up bodily in the centre.

Application of a load of about 12 tons by the crane brought the crown voussoirs out neatly for a length of 5 ft. from the face. It was, however, expected that after this operation the haunches would collapse, but actually they remained upright without the support of the crown. The removal of the haunches also was, therefore, effected by manipulating the cradle to engage this portion with its axis at right angles to that of the tunnel, and in this way the masonry in the overhanging haunches was removed from both sides.

Later the haunches were demolished with light explosive charges, in holes about 18 in. deep on an average, and spaced 2 to 3 ft. apart, in diamond pattern, so as to cover the area left cantilevered after the first operation with the cradle; the charge used was about 10 oz. of gelignite. The demolition of the whole 85-ft. tunnel took only about 15 days.

Progress of the Work

The first of the Thull Ghat diversions, No. 5, was opened on November 18, 1949, by the General Manager, Mr. A. C. Chatterjee. Diversions Nos. 2 and 1 on the Bhore Ghat were opened on December 3 and 15 respectively, and No. 6 early this year. According to programme, all the diversions and re-spaced tracks on the Thull Ghat should be in service by the middle of this year, and those on the Bhore Ghat early in 1951.

Dismantling lining of tunnel No. 8 (Thull Ghat) for conversion to an open cut. Crane and cradle lifting crown stones out of arch

APRIL TOURIST TRAFFIC TO BRITAIN.—According to figures published by the Travel & Holidays Association, something like 50,000 visitors, which is a record figure, arrived in Britain in April; this is higher than the prewar average for the month, and an increase on the figure for April, 1949. The total includes an estimate of visitors from the British Commonwealth, for whom final figures are not yet available; the number of foreign visitors was 35,000, or 37 per cent. more than the April average before the war, and 8 per cent. more than in April last year. The biggest increase was in the number of U.S.A. visitors, who totalled nearly 10,000, 36 per cent. more than in April, 1949; there was also 2,700 American travellers in transit who contributed much to tourist dollar earnings.

DESIGN IN LONDON TRANSPORT.—Mr. Harold F. Hutchison, Publicity Officer, London Transport Executive, addressing the Bromley (Kent) Art Society recently on the subject of design in London Transport, paid a tribute to the tradition inherited from the days of Frank Pick and to the enthusiasm with which Lord Latham, Chairman of the London Transport Executive, was determined that this tradition should be kept alive. The meeting was held at the Bromley College of Art under the presidency of Mr. Keith Coleborn, Principal of the College and Chairman of the Society; the speaker was introduced by Mr. George Dodson-Wells, Chief Public Relations Officer, London Transport Executive. The foundation stone of London Transport design, said Mr. Hutchison, was the Johnston type first cut for Frank Pick as long ago as 1916, which clearly combined beauty with utility. What happened when control of design was relaxed was visible today in the legacy of the war years when maintenance was impossible, when railway platforms became shelters, and when emergency notices were plastered everywhere; great strides had been made recently in cleaning up, but the task would take years to complete.

ROLLING STOCK FOR STOCKHOLM UNDERGROUND.—In spite of the rather short average station distance, 720 yd., the new rolling stock for the Stockholm underground now under construction is required to work to an average speed of 20 m.p.h., including station stops of 15 sec. After prolonged study of American methods, it was decided to motor all the axles and adopt the New York system of gear arrangement and control developed by Westinghouse. The equipment for the first 200 cars is constructed by the Swedish Asea Company by arrangement with Westinghouse. For this reason, the New York voltage of 600 has now been adopted for the system instead of the 750 voltage originally envisaged. The motors are arranged parallel to the axles, the gear ration being 1:8·235. Maximum speed is 55 m.p.h., corresponding to 4,130 r.p.m. The mechanical parts are built by Svenska Järnvägsverkstäderna at Linköping. The cars are equipped with electro-pneumatic brake and full-automatic electro-pneumatic coupling of American make, similar to the equipment of the latest New York cars. The weight of the empty car, including electric equipment, is 30-31 tons. The maximum gross weight is reckoned at 42 tons. The door equipment is similar to that of the latest London tube rolling stock, except that the guard will ride in the last but one car. A tell-tale light is fitted to the side of the car to indicate a door failure. The trains are equipped with telephone connection between driver and guard. This equipment is coupled with a loudspeaker circuit which enables the train staff to make announcements to passengers in all cars, such as announcing the name of the next station, giving the "all change" advice, or transmitting information regarding failures or delays.

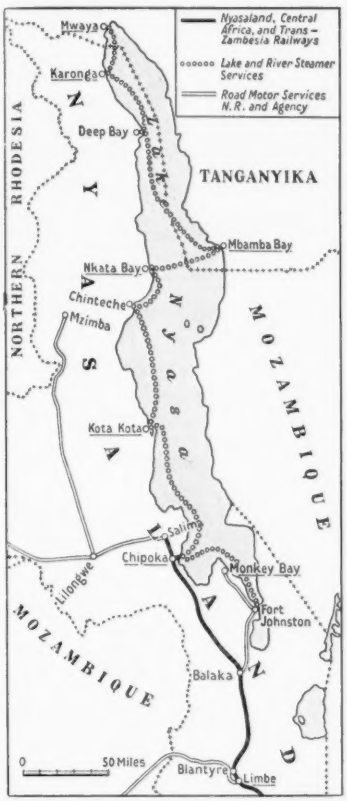
BLACKPOOL AND MORECAMBE ILLUMINATIONS.—The North Eastern Region of British Railways has arranged 95 excursions to the Blackpool and Morecambe illuminations. The Blackpool illuminations will start on September 15 and end on October 23; those at Morecambe will be held between August 25 and October 23. The trains will start from 26 different places in the North East, including Newcastle, Sunderland, Middlesbrough, Saltburn, West Hartlepool, Darlington, York, Hull, Leeds, Castleford, Ripon, Scarborough, Bridlington, Whitby, Richmond, and will run mostly on Saturdays and Sundays.

Radio for the Nyasaland Railways

Installation for port-to-port and port-to-ship communication on Lake Nyasa

THE Nyasaland Railways operate one cargo ship, the *'Mpasa*, six tugs, and a number of barges on Lake Nyasa, the third largest in Africa and 1,600 ft. above sea level. The latest addition to the fleet is the *Ilala II* being built by Yarrow & Company; it has accommodation for 368 passengers and 100 tons of cargo.

The maintenance base for the fleet was formerly at Fort Johnston, but it has been moved to Monkey Bay, approximately 30 miles from Chipoka, on the Nyasaland Railway, the transhipment point for rail and lake. A 500-ton floating dock, constructed by Head, Wrightson & Co. Ltd., is being shipped out partly assembled to Monkey Bay. The routes are subject to severe storms and winds.



Map of part of Nyasaland showing by underlines the radio headquarters and stations and the railway headquarters

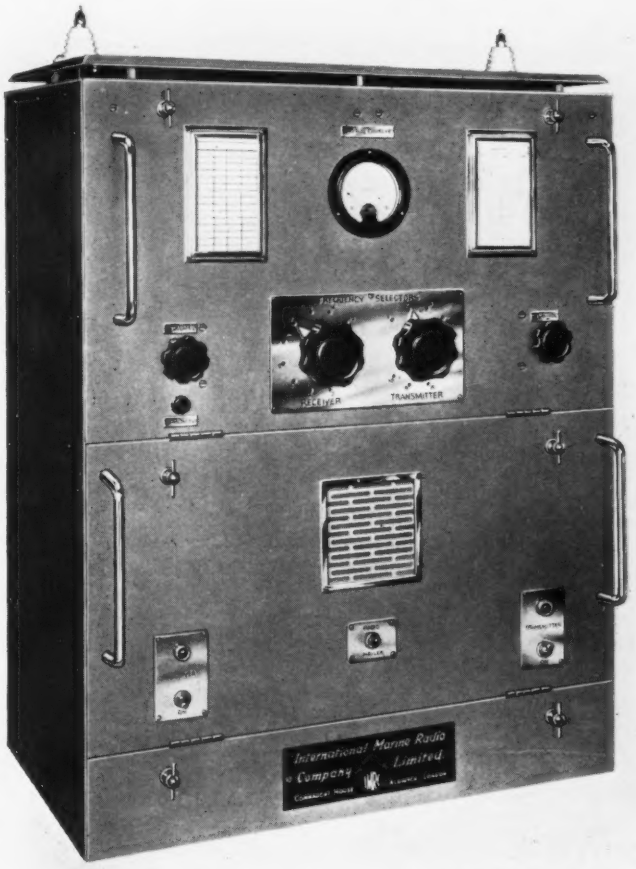
The Nyasaland Railways have entrusted the International Marine Radio Co. Ltd., Croydon, with the provision of a network of stations around the shores of the lake for the maintenance of radiotelephone and radiotelegraph communications between the ports and ships plying on the lake. The object of the installation is to ensure not only satisfactory communication between ports and ships, and *vice versa*, but also between the various ports.

The distance between the ports at the extremities of the lake is approximate y 320 miles. In addition, the lake headquarters station at Monkey Bay has to maintain communication with the railway headquarters at Limbe, a further 120 miles south. The configuration of the lake is effectively covered by a directional aerial system at each shore radio station. An important consideration was that the equipment should be simple to maintain so that it could be operated by semi-skilled staff.

In view of these considerations it was decided to use a transmitting aerial of the folded terminated dipole type, with wideband frequency characteristics, at each shore station. It is considered that this type of aerial will provide the necessary directional properties in a north-south line, whilst still maintaining an adequate field strength in the east-west line for communication with ships, and also with radio stations on the opposite side of the lake. For reception, a separate aerial of the normal vertical type will be used at each of the shore stations. As highly directional aerial systems are generally unsuitable for use aboard small vessels, it was decided to use the single vertical wire type.

There is an a.c. mains supply functioning at Monkey Bay and Limbe, but all other stations, including the ships' transmitters, have to operate from batteries. The transmitters at Limbe, Monkey Bay, and Mwaya will deliver 75 watts to the aerial; all the other stations will have a power of approximately 25 watts. A selective calling device can be used to indicate when an unattended station is being called.

Both types of equipment incorporate similar basic circuits, but the 75-watt transmitters use voice-operated carrier control in addition to the normal press-to-talk facility. Crystal-controlled frequencies up to a maximum of ten are available on both transmitters and receivers.



Radio transmitter-receiver for the Nyasaland Railways

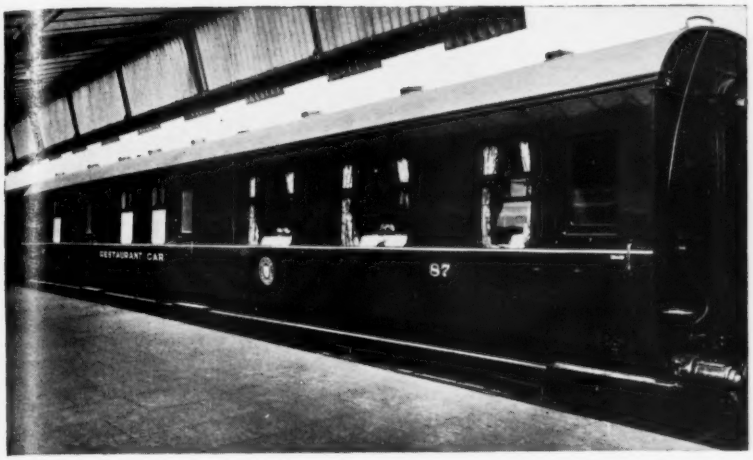
Buffet and Dining Car for Ulster Transport

Dining compartment allowing ample freedom of movement for passengers and staff

Plastics and aluminium are extensively used in the bar section of the new car

Buffet and Dining Car for Ulster Transport

Features of road vehicle body construction have been incorporated in this new design



A NEW buffet and dining car was placed in service by the Ulster Transport Authority on May 5, and is now operating between Belfast and Londonderry. The coachwork was designed by the merged technical staff of the U.T.A. and was erected in the body building shops which prior to the merger in 1948 were solely engaged on road vehicle body construction.

Many features incorporated in the construction have emanated from the technique employed on road vehicle body manufacture. The framing is of composite construction, *e.g.*, timber scantlings suitably reinforced, first-quality teak being principally employed. The main departure from railway practice is 14 S.W.G. aluminium sheets for panelling.

The main windows have large double glazed lights with double sliding extractor ventilators. The smaller windows, which are also double glazed, have single sliding extractor ventilators. The wall spaces between the outside panelling of the body and the inside sheeting are filled with fibre glass insulation. This material will subdue running noises, and, together with the double glazing, will help to reduce the heat losses in the winter, and tend to keep the car cooler in hot weather.

The main compartments are a dining compartment seating 15 passengers, a kitchen with adjoining pantry, and a bar where both alcoholic and non-alcoholic beverages and snacks can be obtained by those passengers who do not wish to have a full meal.

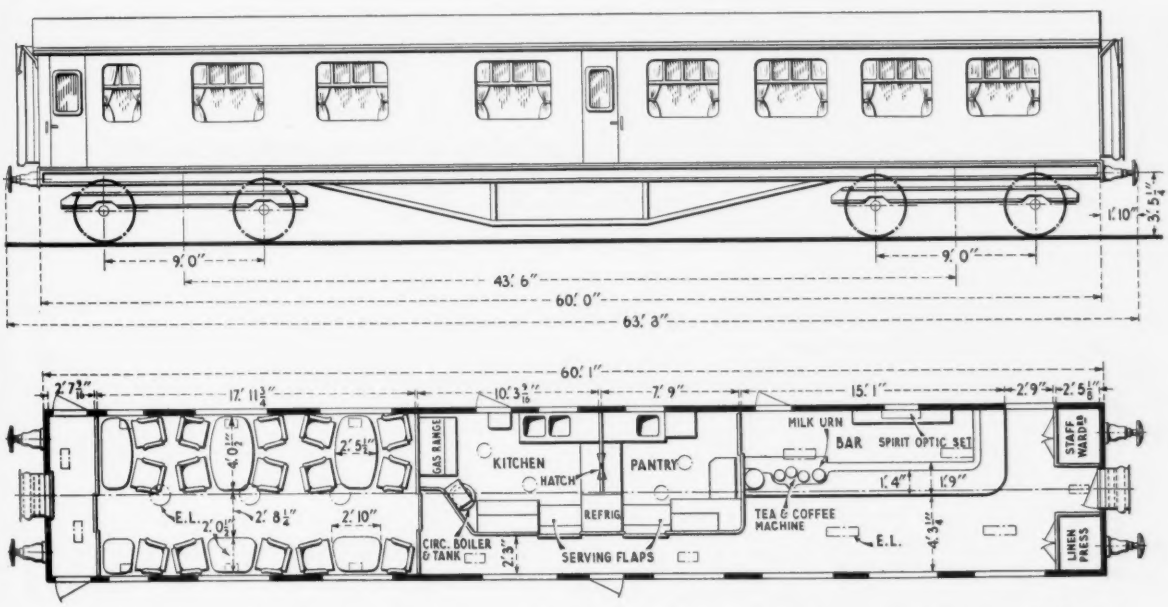
Interior Finish

The interior finish of the dining compartment, corridor, and bar is of Australian walnut veneer on aluminium sheets, finished with mouldings, and polished with a flat cellulose finish. The layout of the dining compartment, with loose chairs, is such that the freedom of movement of passengers and attendant staff is greatly improved, compared with previous vehicles of this kind.

The tables, which have been constructed in tubular steel, have a single pedestal support and a bracket to the body side. The tops have a large area, are made from multi-ply board covered with a plastic veneer, and are mounted on rubber to prevent vibration. The chairs, which were constructed in the U.T.A. works, are in light polished native ash, with a light-blue patterned upholstery. The cushions and backs, which are held in position by special fasteners, are Dunlopillo filled, and are easily detachable for cleaning purposes.

The floor is covered by felt and by a thick pile fitted carpet of pleasing design. A runner of the same material and design is provided which can easily be removed for cleaning. Tapestry curtains, which are in various harmonising shades, are hung round the dining

(*Continued on page* 661)



Seating arrangement and principal dimensions of buffet and dining car for the Ulster Transport Authority

Another Vessel for the Channel Services

(*See article on page* 662)

First class smoke room and bar of the ss. "Brighton"

Restaurant arranged to seat 100 *passengers*

RAILWAY NEWS SECTION

PERSONAL

The King's Birthday Honours List

Among the honours conferred in the King's Birthday list are:—

Baron

Sir Cyril Hurcomb, G.C.B., K.B.E., Chairman, British Transport Commission.

Knights Bachelor

Mr. Archibald John Boyd, Chairman, Railway Carriage & Wagon Builders' Export Group.

C.B.E.

Mr. Robert Davidson, Member, Docks & Inland Waterways Executive.

Mr. Hubert William Warwick Fisher, O.B.E., Principal Assistant Secretary, Ministry of Transport.

C.I.E. APPOINTMENTS

At the first meeting of the Board of the newly constituted Coras Iompair Eireann, held on June 5, Mr. G. B. Howden, General Manager of the Great Northern Railway (Ireland), was appointed General Manager of Coras Iompair Eireann. He succeeds Mr. F. Lemass, who becomes Chief Officer.

Mr. Ian M. Stewart and Mr. D. M. Semple have joined the board of the North British Locomotive Co. Ltd.

Mr. D. C. Woodward, General Manager, Nigerian Railway, who has been in England on leave, returned to Nigeria on June 8, on M.V. *Accra*.

Mr. A. J. Webb, General Superintendent (Staff & Training) Railways, London Transport Executive, received the insignia of a Commander (Brother) of the Order of St. John at an investiture held in the Great Hall of St. Bartholomew's hospital on May 18.

Mr. R. A. Riddles, C.B.E., M.I.Mech.E., M.I.Loco.E., who took office on June 1 as President of the Institution of Locomotive Engineers for 1950-51, is the Member for Mechanical & Electrical Engineering of the Railway Executive. He joined the L.N.W.R. as a premium apprentice at Crewe Locomotive Works in 1909. After serving with the Royal Engineers from 1914 to 1919, he held technical appointments with the L.N.W.R. and L.M.S.R. at Crewe and Derby, before being appointed Locomotive Assistant to the Chief Mechanical Engineer (1933), Principal Assistant to the Chief Mechanical Engineer (1935), Mechanical & Electrical Engineer (Scotland) (1937), Chief Stores Superintendent (1943), and a Vice-President (1946). Mr. Riddles' services were lent during the late war to the Ministry of Supply, to create a directorate for the provision of transport equipment (D.T.E.); and he was given also the responsibility for all Royal Engineer equipment. The experimental bridging establishment at Christchurch came under the directorate, which designed and produced the Bailey Bridge and other items of field equipment. The Everall Bridge for railway purposes also was produced by the directorate. It provided internal-combustion engines other than aircraft, road vehicle and submarine; cranes; pipe-lines; road-making machinery; and many other types of equipment. The director also was instrumental in supplying piers and pierheads for the "Mulberry harbour"—the prototypes had been completed and tested before Mr. Riddles left the Ministry at the request of the L.M.S.R. in August, 1943. Mr. Riddles was prominently concerned with the design and production of large numbers of standard British-built locomotives provided during the war primarily for service overseas; over 1,000 of the "austerity" 2-8-0 and 2-10-0 types were built. In 1941 he was appointed Deputy Director-General, Royal Engineer Equipment, and had a special mission dealing with supplies to Russia; he also visited America in connection with the sending of essential stores to Persia. Since his appointment as a Member of the Railway Executive on its formation in 1947, he has been mainly responsible, among other matters, for the standardisation plans for locomotive types and new carriage stock on British Railways. Mr. Riddles was President of Junior Institution of Engineers for the year 1947-1948

Mr. R. A. Riddles

President, Institution of Locomotive Engineers, for 1950-51

Mr. K. R. Thomas, M.B.E., has been appointed Recruitment, Training & Education Officer, London Transport Executive.

Mr. S. Ridgway, A.M.I. Mech.E., A.M.I.Loco.E., has been appointed Works Manager, W. G. Bagnall Limited.

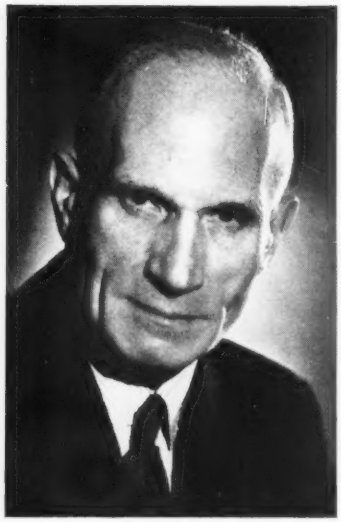
We regret to record the death on May 6, at the age of 72, of Mr. Harold T. Malcolmson, President and General Manager of the Toronto, Hamilton & Buffalo Railway.

Mr. Harry L. Dowsett, Chairman & Managing Director of the Companies in the Dowsett Group, left London for Australia in the P. & O. liner *Strathmore* on May 10 to visit Dowsett Engineering (Australia) Pty. Ltd., the Australian subsidiary company, in connection with the further development of business in Australia, where the Company is engaged on civil engineering projects and opencast coal mining. Mr. Dowsett is expected to return to England in the latter half of July.

We regret to record the death on June 3, at the age of 69, of Mr. Harry H. Yule, who joined the East Indian Railway in 1900 and was Officiating Chief Commercial Manager at the time of his retirement in 1937.

The Minister of Supply has appointed Sir William Stanier, F.R.S., as Chairman of the Board of Directors of Power Jets (Research & Development) Limited. Sir William Stanier has been a Director of Power Jets since 1944. He is a Past President of the Institution of Mechanical Engineers and was Chief Mechanical Engineer, L.M.S.R., from 1932 to 1944. In 1942 he was appointed Scientific Adviser to the Ministry of Production, and now holds this appointment with the Ministry of Supply. Sir William Stanier is Chairman of the Ministry of Supply Industrial Gas Turbine Committee and of the Mechanical Industries Division and the Welding Committee of the British Standards Institution.

We regret to record the death on May 17, after a long illness, of Mr. J. R. Edwards, Assistant (Telecommunications), Signal & Telecommunications Engineering, Railway Executive. The funeral took place on May 24 at Bushey Parish Church, and among those present were:—Messrs. J. C. L. Train, Member, Railway Executive; R. A. Riddles, Member, Railway Executive; H. H. Dyer, Chief Executive Officer Engineering-Signal & Telecommunications, Railway Executive; S. Williams, Signal & Telecommunications Engineer, London Midland Region; E. Lambert, Representing Mr. J. W. Watkins, Operating Superintendent, London Midland Region; A. F. Bound, former Signal & Telegraph Engineer, L.M.S.R.



Mr. A. T. Wilford

Appointed Director of Research, London Transport Executive

Mr. H. McIntyre

Chief of Division (Workshops & Technical), Mechanical Department, General Roca Railway, Argentina, who has retired

Mr. J. A. Gnanapragasam

Appointed Assistant Divisional Transportation Superintendent, Ceylon Government Railway

Mr. A. T. Wilford, B.Sc., A.R.C.S., F.R.I.C., C.I.Mech.E., F.Inst.Pet., who, as recorded in our May 26 issue, has been appointed Director of Research, London Transport Executive, is 57 years of age, and was educated at Wilson's Grammar School, Camberwell, and the Royal College of Science. He entered the service of the former Underground Companies in 1920 as Chemist with the London General Omnibus Company, and became Chief Chemist in 1926, a post which he continued to occupy under the London Passenger Transport Board. From January 1, 1949, Mr. Wilford was appointed Superintendent of Laboratories in charge of the central laboratory, Chiswick, and the three generating station laboratories. The functions of the Director of Research include the general direction and oversight of the scientific, technical and operational research activities of the London Transport Executive (other than those falling within the scope of the Development Sections of the Engineering Departments), and of the laboratory services. He will also liaise with outside research agencies, with the Director of Research of the Railway Executive and with the Road Transport Executives. The Director of Research will be a Member of the Research Co-ordination Committee of the British Transport Commission. Mr. Wilford is a Member of the Council of the Institute of Petroleum, and is a Crompton-Lanchester Medallist of the Institution of Mechanical Engineers.

Mr. Hugh McIntyre, Chief of Division (Workshops & Technical) in the Mechanical Department of the General Roca Railway, who retired on March 31, served his apprenticeship with the North British Locomotive Co. Ltd. between 1910 and 1914. He was on active service in the first world war with the Machine Gun Corps of the Cameronian Scottish Rifles and on demobilisation spent a short period with Wm. Beardmore & Co. Ltd. Mr. McIntyre joined the Buenos Ayres Great Southern Railway as draughtsman in 1921 and in 1922 he was appointed Assistant Chief Draughtsman; the following year he became Assistant Locomotive Works Manager. On the arrival of the first diesel units, Mr. McIntyre was placed in charge of organisation, repairs, maintenance and running, which he was responsible for until his retirement.

Mr. J. A. Gnanapragasam, A.M.I. Loco.E., who, as recorded in our April 28 issue, has been appointed Assistant Divisional Transportation Superintendent, Ceylon Government Railway, was born in 1908, and received his education at Trinity College, Kandy. He entered the service of the Ceylon Government Railway in 1927, as a special apprentice (supervisory grade) and gained experience in various sections of the railway's central workshops before receiving his appointment as foreman in 1935. Under the departmental scheme for training for higher-grade posts of the service, Mr. Gnanapragasam was appointed a Probationary Assistant Divisional Transportation Superintendent in 1944. He underwent a course of further training locally and afterwards with the L.M.S.R. from 1946 to 1948. On his return to Ceylon in August, 1948, Mr. Gnanapragasam was appointed to act as Assistant to General Manager (Operating), and from October, 1949, until his present appointment, he has been Acting Assistant Divisional Transportation Superintendent in charge of the Locomotive Running Shed in Colombo. Mr. Gnanapragasam is an Associate Member of the Institute of Traffic Administration.

Institute of Transport

The undernamed Ordinary Members of Council of the Institute of Transport will retire at September 30, 1950.—Nine Members:—Messrs. D. Blee, M. A. Cameron, H. W. Elliott, P. M. Hill, A. B. McLeod, G. Morton, H. Shankland, D. M. Sinclair, J. O. Wood; One Associate Member: Mr. C. F. Klapper.

To fill the vacancies created by the foregoing retirements, the Council has nominated the undernamed:—Nine Members: Messrs. Raymond William Birch (Chairman, Potteries Motor Traction Co. Ltd.), George Cardwell (Chairman, Road Passenger Executive), Frederick Leonard Castle (General Manager, Siemens & General Electric Railway Signal Co. Ltd.), William Joseph Everard (Director, F. T. Everard & Sons, Ltd.), Archibald Henderson (Member, Road Haulage Executive), Cyril Hamilton Minett (Manager, Legal & Claims Department, British India Steam Navigation Co. Ltd. (Gray, Dawes & Co.)), Stanley Ernest Parkhouse (Chief Officer (Operating), Railway Executive), John Reginald Pike (Chief Rates & Charges Officer, Railway Executive), George Harry Searle (Director of Transport, Ministry of Food). One Associate Member: Mr. Sidney Berald Taylor (Deputy Secretary, British Transport Commission).

Reference to the election of President, Vice-Presidents, and Past-Presidents to serve on the Council, for the year 1950-51, was made in our June 2 issue.

Mr. R. Coulson, Assistant to Commercial Superintendent (General-Goods), Eastern Region, British Railways, retired on April 29. He joined the Great Central Railway in 1903, and, after serving at various stations, was appointed relief clerk in the office of the Chief Goods Manager in 1913. Mr. Coulson served in H.M. Forces from August, 1916, until April, 1918, when he resumed his duties with the G.C.R.; in 1929 he was appointed Chief Clerk in charge of the General Section, office of the Goods Manager, Southern Area, L.N.E.R. He was appointed Chief Clerk, office of the London City Manager, in 1931 and went to Marylebone as Goods Agent in 1940; in 1942 he was promoted to the corresponding post at Bishopsgate. Three years later Mr. Coulson was appointed Acting Assistant to Goods Manager, Liverpool Street, and in July, 1947, became Assistant to Goods Manager, Liverpool Street. On the reorganisation subsequent to nationalisation, Mr. Coulson was appointed Assistant to Commercial Superintendent (General-Goods), in March, 1948. At a recent meeting of District Commercial Officers (Eastern Region), Mr. Coulson was presented with a cheque as an expression of goodwill and esteem from his colleagues to mark the occasion of his retirement. Mr. C. K. Bird, Chief Regional Officer, Eastern Region, in making the presentation, paid tribute to Mr. Coulson's qualities and Mr. C. C. G. Dandridge, Commercial Superintendent, Eastern Region, spoke of the loyal service and co-operation he had received from Mr. Coulson.

Associated Electrical Industries Limited

Greater volume of production, with increased orders for electronic equipment: progress in research

The annual general meeting of Associated Electrical Industries Limited was held in London on May 31, the Rt. Hon. Oliver Lyttelton, Chairman, presiding.

The volume of production in 1949, remarked Mr. Lyttelton, was about 11 per cent greater than for the previous year. Although this rate of increase could not be maintained progressively, the record was significant. It was due to increased manufacturing capacity, expenditure on machine tools and other production facilities, and to the co-operation of the workers. Deliveries of finished apparatus during the year amounted to £52,000,000.

Last year saw the golden jubilee of the Metropolitan-Vickers Electrical Co. Ltd., and to mark the occasion special contributions were made to the long-service and other associations of the firm, including the sickness benevolent fund.

The cash investment in the ordinary stock or equity now amounted to £25,344,000; the final dividend recommended by the board meant a return to the stockholders on the true capital invested of little more than 3½ per cent. Such a return was unduly low, taking into account the risks undertaken and the long period during which conservative management and restraint in the distribution of dividends had built up the financial strength of the company. During 1946-49 no less than £16,000,000 had been invested in the business either by stock and loan issues or by the retention of profits.

Stockholders should realise how limitation of dividends affected them at a time of high taxation and increased earnings. During 1947-49 the company had provided for income tax and profits tax £8,252,000, and paid out in wages and salaries £52,000,000, while the ordinary stockholders received dividends of £2,700,000 before the deduction of tax, or an amount £1,485,000 net.

The figure of £52,000,000 for wages meant that they had been able to increase the earnings of employees by an average of nearly 17 per cent. The additional cost to the company was £5,000,000. Thus, the amount paid in tax had been more than three times, and the increases in earnings by employees almost twice, the total gross amount received by stockholders.

Two amounts of £1,250,000 each had been transferred to general reserve. The first of these came from the taxed earnings of the group in 1949. The second represented transfer from other reserves to general reserve, which now stood at £7,000,000.

Despite the expanding turnover and increased invoicing, stocks and work in progress, taking into account progress payments, had shown a reduction of £3,020,000 during the year. It was hoped to establish a yet lower ratio between stocks and work in progress on the one hand and total output on the other during the present year.

The total volume of orders at one time exceeded £100,000,000, which was a remarkable figure even if deliveries were spread over a number of years, and the work was well within the capacity of the various factories. The figure did not include considerable sales by the group of products ordered for stock or sales which were normally made direct to the customer without being included in the order book, such as domestic appliances, lamps, and fittings.

Orders for electronic equipment of all kinds exceeded the amounts booked in 1948 by £6,250,000, excluding cathode ray tubes and valves, and this business was still expanding rapidly.

The constituent companies continued to take a high proportion of the total orders for generating plant placed in this country and had obtained a large share of international export business.

Export orders obtained by Metropolitan-Vickers which deserved special mention were those for generating plant for the Electricity Supply Commission of South Africa, the State of Victoria, Australia, Turkey, and Norway.

The experimental gas turbine locomotive ordered from Metropolitan-Vickers by the former Great Western Railways was in an advanced state of construction and should be running on British Railways later this year.

Orders received by the British Thomson-Houston Co. Ltd. included hydro-electric generating plant for Ceylon, steam plant for British power stations, and radar equipment for Scandinavian countries and motors for rolling mills.

They were spending annually over £1,000,000 in research and experimental work. The year had been one of great activity and progress in the three research departments of the group, which were contributing to the developments taking place in nuclear physics and electronics and providing training for the men who would apply this new knowledge to industry.

The report and accounts were adopted.

Buffet and Dining Car for Ulster Transport

(*Concluded from page* 657)

compartment and along the public side of the bar.

The bar consists of a longitudinal counter with a green plastic top. The top, which is cigarette proof, is edged with aluminium strip moulding. Ample storage space is provided in shelves beneath the counter, and at the end adjoining the pantry a tea and coffee machine is placed. Behind the counter, a display cabinet has been fitted against the side wall of the coach. An optic set for spirits is incorporated in this unit.

Kitchen Equipment

The kitchen and pantry are well provided with cupboards for provisions and utensils. These and the walls of the two compartments are faced with plastic, which can easily be kept clean. An ice-chest, also covered with this material, has been built into the separating partition. It is accessible to both compartments.

The cooking apparatus comprises a large gas range with a thermostatically controlled oven. Hot water for washing up is provided from a gas circulating boiler in the kitchen. This unit also caters for the pantry and bar. Calor gas is used for all the equipment and is stored in bottles beneath the sinks. At the bar end of the coach two small compartments have been built to accommodate the staff wardrobe and provide storage space for linens and other equipment. All the floors, with the exception of the dining compartment, are covered with synthetic Semastic tiles.

Three circular roof lights provide the main lighting in the dining compartment; in addition, small side lights have been fixed to the cantrail above each table. These have been specifically designed to give the maximum amount of light on the tables. The lighting in the remainder of the coach is provided by rectangular fittings which are spaced to give an even distribution of light.

The car is heated by large panel heaters placed in well insulated pockets in the body side walls and are obscured by ornamental grilles; ventilation is provided by Airvac equipment, and an electric fan has been installed in the kitchen.

Principal Particulars

Leading dimensions of the buffet car are as follow:—

Length over buffers	63 ft. 8 in.
Length over headstocks ...	60 ft. 0 in.
Width at waist	9 ft. 5½ in.
Bogie wheelbase	9 ft. 0 in.
Height from rail to top of roof ...	12 ft. 4¾ in.
Weight	31 tons
Gauge	5 ft. 3 in.

The following firms, as sub-contractors, supplied materials and fittings for the new car:—

Tubular cable frames ...	Accles & Pollock Limited
Sliding door equipment ...	Beckett, Laycock & Watkinson Limited
Roof ventilators	Greenwood's & Airvac Ventilating Co. Ltd.
Optic measures and stainless steel sinks	Gaskell & Chambers Limited
Ornamental grilles ...	G. A. Harvey & Co. (London) Ltd.
Aluminium panels... ...	British Aluminium Co. Ltd.
Electric lights and fans ...	J. Stone & Co. Ltd.
Gas range	Radiation Limited
Decorative tile floors ...	Semtex Limited
Fibreglass insulation ...	W. Gilmour Smith & Co. Ltd.
Tea and coffee machine and hot water circulating boiler	W. M. Still & Sons Ltd.
Ice chest	J. H. A. Swinson & Co. Ltd.
Heaters	Westinghouse Brake & Signal Co. Ltd.
Extractor ventilators ...	Windshields of Worcester Limited
Plastics	Rosnoid Limited
Veneered aluminium sheets	Venesta Limited
Dunlopillo for chairs ...	Dunlop Rubber Co. Ltd.

MALTON-DRIFFIELD LINE PASSENGER SERVICE WITHDRAWN.—Since the last train on June 3, the North Eastern Region passenger train service to Settrington, North Grimston, Wharram, Burdale, Sledmere & Fimber, Wetwang, and Garton has been withdrawn. The stations continue to be available for parcels and merchandise traffic by passenger train and for freight traffic, and these traffics will still be collected and delivered by British Railways. For passenger traffic the districts served by these stations are covered by the East Yorkshire Motor Services and other bus companies.

Another Vessel for the Channel Services

This week the new "Brighton" went into service on the Newhaven-Dieppe route

An addition to the British Railways fleet of cross-Channel steamers, the s.s. *Brighton*, went into service on the Newhaven-Dieppe route on June 8. This vessel is jointly owned by the S.N.C.F. and British Railways, though manned by a British crew entirely, and she was launched in October last at Dumbarton by Madame Lemaire, wife of the President of the International Union of Railways. There was a reference to the launching in our issue of October 21 last year.

This is the sixth ship to be named *Brighton*, and replaces a predecessor which was bombed and sunk in Dieppe Harbour in 1940 while serving as a hospital carrier. Built by William Denny & Bros., Dumbarton, the new vessel has an overall length of 311 ft., speed of 24 knots, and gross tonnage of 2,875.

There are two continuous steel decks, main and upper, and also a boat deck above the upper deck, a bridge deck above the forward end of the boat deck, and a lower deck forward and aft below the main deck. There are two holds, one forward and one aft, for the carriage of baggage and cargo.

Accommodation

An entrance vestibule to the first class accommodation is situated at the forward end of the boat deck. This vestibule and the staircase is panelled and furnished with settees. The staircase has railings of silver bronze. The first class smoke room opens off the entrance vestibule. This room is fitted with large windows at the forward end and at both sides. A well-fitted bar, with store, is arranged across one after corner. The room is furnished in Jacobean style, with walls panelled in weathered oak, and a stone fireplace is arranged with decorative electric fire at the forward end. Oak framed chairs and settees are covered in red hide and the tables are fitted with Formica tops.

A first class general lounge is provided at the forward end of the promenade deck, and this is furnished with comfortable chairs and settees upholstered in leather. A fireplace, with an artificial coal fire, is arranged at the forward end. The lounge is panelled and a buffet is provided in this space. Korkoid floor covering and attractive window curtains add to the pleasing appearance of the lounge.

Abaft the general lounge on the starboard side are two *cabines-de-luxe*. These are panelled, and each contains two settee beds, armchair, coffee table and a dressing table with triple mirrors. Settees and chairs are tastefully upholstered and a fitted carpet and curtains are arranged to match. Each cabin has a lavatory arranged which contains a shower bath and pedestal wash basin. Opposite on the port side are three well-fitted private cabins.

The restaurant is arranged to seat 100 passengers, some at tables for six, and others at tables for four. Large side windows provide an excellent view and good natural lighting.

There are eleven private cabins on the main deck. There is also a third class lounge for 66 passengers, together with a bar and buffet, while on the lower deck are first and third class lounges, furnished with settees which can be adapted to form two-tier sleeping berths. Total accommodation is provided for 1,450 passengers and a crew of 74.

The final trials were carried out in the English Channel on June 2, and those present included:—

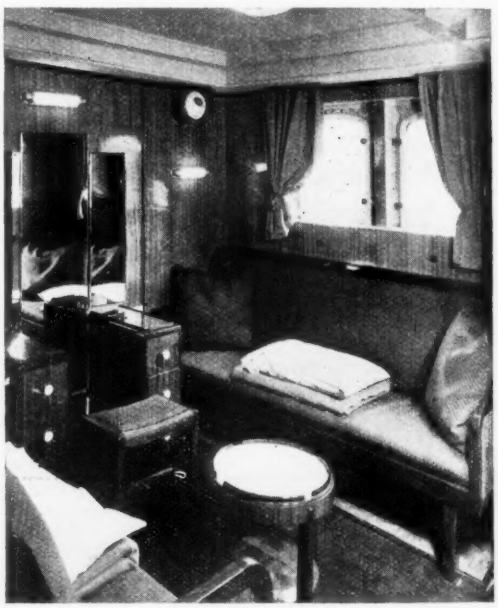
Railway Executive: Messrs. G. M. Leach, Assistant to Chief Officer (Continental); O. H. Corble, Chief Officer (Marine); D. S. M. Barrie, Public Relations Officer.

Southern Region, British Railways: Messrs. C. P. Hopkins, Chief Regional Officer; R. P. Biddle, Docks & Marine Manager; C. Grasemann, Public Relations of Publicity Officer; J. Bridger, London Central Divisional Superintendent, Redhill; S. H. Isaac, Assistant to Docks & Marine Manager; J. P. Campbell, Superintendent Marine Engineer, Southampton; Captain G. F. Jefferies, Marine Assistant, Southampton; Messrs. E. R. Dewdney, Assistant to Superintendent Marine Engineer, Southampton; H. J. Grant, General Assistant to Docks & Marine Manager; R. J. Cardy, Divisional Marine Engineer, Newhaven; S. Goodyear, Marine Engineer, Newhaven; R. E. Sinfield, Continental Superintendent, Victoria; E. W. Dean, Passenger Assistant to Continental Superintendent; K. R. Ellson, Public Relations Assistant; H. A. Venton, Representative, Public Relations & Publicity Department; A. C. Streatfield, Press Officer.

Others present included Messrs. Deshayes, French National Railways; F. von Fabini, Austrian Federal Railways; Mr. Ernst, Swiss Federal Railways; Messrs. L. M. Ashford, Thos. Cook & Sons Ltd.; and D. Fay, Dean & Dawson Limited.

Speaking at the luncheon held during the final cruising trials which were held in the English Channel on June 2, Mr. C. P. Hopkins, Chief Regional Officer, Southern Region, British Railways, proposing the toast of the Ship and the Shore, said that the *Brighton* was the sixth vessel of a long line that has served between England and France. The name *Brighton* had carried them over one hundred years of cross-Channel service.

Mr. R. P. Biddle, Docks & Marine Manager, proposing the toast of the Shipbuilders, said that the *Brighton* was a great credit both to her owners and her builders. Four of their ships lost at Dunkirk were Denny built. The Southern Region cross-Channel steamers carried over 2,000,000 passengers during the last twelve months.



First class cabin

Mr. J. M. Denny, Director, William Denny & Bros. Ltd., replying, said that the former Southern Railway and the Southern Region of British Railways had been their clients for 50 years. They had specialised in this type of vessel.

Alderman S. Davey, Mayor of Brighton, responding, wished the ship long and successful service and officers and crew the best of luck. Later, Alderman Davey unveiled a painting by Mr. Hesketh Hubbard of the Royal Pavilion, Brighton, which had been presented by Brighton Corporation.

New Diesel Railcars for G.N.R.(I.)

Mr. G. B. Howden on company's policy of shorter trains and more of them

The inaugural run of the first of the new Great Northern Railway (Ireland) three-unit diesel railcar train sets, described and illustrated in our last week's issue, took place on June 1. A small party of G.N.R. (I.) officers and guests accompanied Mr. G. B. Howden, then General Manager, on a round tour from Dublin to Portadown and back, *via* Greenore. Among those present were:—

G.N.R. (I.): Messrs. G. B. Howden, General Manager; H. McIntosh, Mechnical Engineer; C. H. Slater, Civil Engineer; H. S. Knott, Traffic Manager; J. F. McCormick, Managerial Executive Officer; C. Johnston, Hotels & Catering Manager; R. W. Meredith, Assistant Mechanical Engineer & Works Manager; H. E. Wilson, Assistant Works Manager & Chief Draughtsman; T. J. Carton, District Superintendent, Southern Area; J. F. Atkinson, Commercial Superintendent; J. C. Bailie, Operating Superintendent; G. Henry, Locomotive Running Superintendent; A. M. Beaton, Advertising & Publicity Superintendent.

Messrs. C. F. Cleaver, A.E.C. Railcar Engineer; A. C. Needs, Chief Engineer, Park Royal Vehicles Limited; S. Hollands, A. E. C. Home Sales Manager; J. J. Thorn, A.E.C. Irish Representative.

From June 5 the first of the trains, consisting of two A.E.C. railcars and an intermediate bar and buffet coach constructed at the G.N.R. (I.) works at Dundalk, runs between Dublin and Belfast. It leaves Dublin at 7.30 a.m. and, with four intermediate stops—Drogheda, Dundalk, Goraghwood, and Portadown—arrives Belfast at 10.35 a.m. The return is made from Belfast at 2.15 p.m., arriving Dublin at 5.15 p.m. On this set the total seating capacity is 142, and practically all seats are provided with a table; there is a refreshments service to all parts of the train. As the remainder of 20 cars ordered are delivered they will be used on main and secondary lines in substitution for certain steam trains, but most G.N.R. (I.) services will continue to be worked by steam.

Mr. Howden, at a luncheon at the Great Northern Hotel, Greenore, welcomed the guests, and said that for a long time the G.N.R. had been considering how to improve the quality of its service. It had decided that frequency was of vital importance and had set as its objective getting as near as possible to the services offered by road transport. He went on to refer to the advocacy of *The Railway Gazette* of "shorter trains and more of them," and said that the G.N.R. had adopted that policy.

Mr. C. F. Cleaver thanked Mr. Howden and the directors of the G.N.R. (I.) for their confidence in the contractors and for their suggestions towards improvements in the design of railcars. He referred to Sir James Milne's faith in that form of transport and to the help and encouragement his company had received from Sir James Milne during his period as General Manager of the Great Western Railway.

C.I.E. Summer Services

Accelerations on main lines and closer co-ordination of rail and road services are the principal features of the Coras Iompair Eireann summer service. Cross-country bus services are re-timed to give road and rail connections at the chief junction points.

The morning mail to Cork now leaves at 6.40, and, as well as giving a connection to Limerick from Limerick Junction, serves all intermediate stations between Limerick Junction and Cork. The chief morning train to Cork is the 9.15 a.m. from Kingsbridge, due Cork at 1.20 p.m. It replaces the 10.30 a.m., which was not due at Cork until 3.10. There is also a fast train to Kerry, leaving Kingsbridge at 10.45 a.m. which, with only three intermediate main-line stops, reaches Killarney at 3.40 and Tralee at 4.30 p.m. The Waterford train *via* Portlaoise now leaves at 9.35 a.m. and connects at Portarlington *via* Clara to Athlone and Galway. The Limerick train, which leaves at 10 a.m. *via* Nenagh, now arrives at 1.25 p.m., almost half-an-hour faster than before. The 6.10 p.m. to Cork leaves at 6.15 p.m. and arrives at 10.15 p.m., 20 min. ahead of previous schedule.

An important improvement is a train at 11.40 a.m. from Cork, connecting at Mallow with a train leaving Tralee at 9.55 a.m. and, with one further stop at Limerick Junction, arrives at Kingsbridge at 3.55 p.m. Connection is also given to and from Limerick and Waterford by this train at Limerick Junction. The former 12.30 from Cork leaves at 12.15 p.m. and arrives in Dublin at 5.15, instead of 5.25.

The afternoon train from Cork leaves at 3.15 p.m. instead of 3 p.m., but reaches Kingsbridge at 7.25 p.m. as before and gives the usual connection from Tralee. The afternoon train from Limerick departs at 3.15 (instead of 3.10) p.m. and arrives in Dublin at 6.35, over half-an-hour faster. The 3.40 p.m. from Waterford to Kingsbridge is accelerated 20 min. The former 9 a.m. from Athlone *via* Clara and Portarlington, leaves at 8 a.m. and reaches Kingsbridge at 10.45 a.m. instead of noon. There is also an afternoon train at 2.45 p.m. from Galway, which leaves Athlone at 4.30 p.m. and gives a connection at Portarlington with both up and down Cork main-line trains.

For travellers to West Clare, a welcome change is a train from both Kilkee and Kilrush at 8 a.m., with suitable connections from Ennis and Limerick to Limerick Junction, where connection is given with both the up and down Cork-Dublin main-line trains. Beginning on July 8, and on all Saturdays until August 26, there will be a 2.5 p.m. from Kingsbridge to Cork, arriving at 6 p.m. and giving connections to Killarney and Tralee.

The 11.10 a.m. for Westport now leaves at 11.5 a.m. The most important innovation on the Midland Section is the alteration of the 4.40 p.m. train to Galway and Sligo to 2.40 p.m. and a train to Westport at 3.55 p.m. The 7.30 p.m. night mail from Westland Row gives the usual connections to Galway, Sligo, and Westport. There is a new train at 12.50 p.m. from Westport to Westland Row, and the up night mail from Sligo leaves half-an-hour later than before.

On the South-Eastern Section, the former 6.15 p.m. train from Harcourt Street to Wexford leaves at 6.40 p.m. An up morning train leaves Wicklow at 8.15 a.m., reaching Harcourt Street at 9.15 a.m., returning from Harcourt Street at 6.10 p.m. There is also a late night train from Wicklow at 9.23 p.m., arriving Dublin 10.40 p.m.

Group of G.N.R.(I.) officers and guests at Portadown during demonstration run of new three-car diesel train

The group includes Messrs. R. W. Meredith, A. M. Beaton, H. S. Knott, J. F. McCormick, G. B. Howden (in black hat), C. Johnston, C. H. Slater, C. F. Cleaver, F. E. Dukes, and T. J. Carton

London Area Passenger Charges Scheme

London Transport receipts for Whitsun were discouraging: Shorter and more frequent trains

The receipts of London Transport for the Whitsun period were 4 per cent. less than for the same period a year ago. This information was given by Mr. A. B. B. Valentine, Member, London Transport Executive, at the resumed hearing into the draft London Area (Interim) Passenger Charges Scheme on June 1.

Mr. Valentine, replying to Mr. Moelwyn Hughes, K.C., for the L.C.C., made it clear that this figure referred to the London Transport Executive area only, and not to the Railway Executive lines in the London area. During the whole of the Whitsun weekend, when the weather was dull, results were "discouraging" when compared with last year, when both the Friday and Saturday were wet.

Fares and the Cost of Living

Mr. Valentine, continuing his evidence, said that the British Transport Commission was aware of the effect of increased fares on the cost of living, and that cost of travel in the London area was an essential feature. Average expenditure on travel in London was probably higher than in other districts. Probably the element of pleasure and recreation movement also was higher than elsewhere.

Mr. Moelwyn Hughes then referred to a statement that of 20 families on a Croydon housing estate paying an average of 25s. a week rent each family spent an average of 15s. 10d. a week on travel. That he gave as a fair example of the extent to which the cost of travel entered into general living costs. Also, many postal workers in London drew wages of £5 or £6 a week, and to a married man with a family a 1s. extra on travelling to work might make all the difference.

Mr. Valentine, while agreeing, said that £5 was much below the average earning.

Mr. Moelwyn Hughes said the scheme recognised that shillings counted and he suggested that one of the limitations which should be attached to it would be a limit of 2s. a week increase in respect of workmen's fares and season tickets. He proposed that the increases desired by the B.T.C. under the proposed scheme which ranged from 40 per cent. to 66⅔ per cent., should be limited to 25 per cent. Revenue loss would be £660,000 if this were applied to railways and trams and trolleybuses. Assuming they had, say, £1 million to burn, would not this limitation of 25 per cent. be desirable?

Mr. Valentine, replying, said he did not accept that it would cost only £1,000,000, and that he was being asked to agree to giving away £1,000,000 of the £3·7 million, which was in effect to abandon the scheme.

Mr. N. R. Fox-Andrews, K.C., for the National Union of Ratepayers' Associations, referred to the average speeds of buses in service in the Central area, which were slightly over 11 m.p.h., and in country areas 13½ to 14½ m.p.h. The reason he raised the point was because economy of operation was one of the objects of the B.T.C. He was informed that on one route there was a layover of from 20 to 25 min.

Mr. Valentine agreed that, broadly speaking, the less layover time the better, but layover would not be calculated in assessing speed. Should a bus be turned round right away the timetables would be upset.

Mr. Fox-Andrews suggested that one way of increasing revenue without taking money from the pockets of the travelling public would be to permit an increased number of standing passengers during peak hours and he suggested an increase of 3 to make the maximum 8 in all.

Mr. Valentine said the point had been discussed and it was decided that it was not practicable. The conductor could not make an efficient collection of fares.

The hearing was then adjourned until the next day, when Mr. Valentine, replying to Mr. Dudley Collard, counsel for the Essex County Council, said that "high priority" had been given to the electrification of the London, Tilbury & Southend line, which he agreed was capable of improvement in regard to trains from the Estuary towns, which were heavily loaded. He did not think there was "much substance" in the complaints about dirty trains.

Referring to country bus services and the practicability of issuing return tickets, Mr. Collard, speaking on behalf of the North West Kent Traffic Advisory Committee, said that in Gravesend there were workmen's return tickets on some bus routes and the conductors had no difficulty in providing the tickets.

Mr. Valentine said it was perfectly practicable to issue return tickets and exercise a reasonable check over them, but they were not desirable. He added that the routes at Gravesend were quite short.

Mr. Collard then dealt with the three routes from Bexley Heath to London. For some years, he said, the former Southern Railway had been pressing people to use the longer and less attractive line into Blackfriars and Holborn to relieve overcrowding on the other lines, and he asked whether it might be considered justified to charge less on a less attractive line.

Mr. Valentine replied that in a case of this sort it was considered appropriate that the charges on all three routes irrespective of distance should be alike. The arrangement of equality of routes was one which the Railway Executive intended to preserve as they thought passengers should be free to make a choice by equality of charge. He agreed that the proposal to raise the 2½d. fare to 3d. would be the biggest single revenue raiser.

Mr. Valentine did not agree that the Green Line coach service was duplicating other services. It provided on quite a large scale a service not provided by others. Though the Green Line service was losing traffic it was still a remunerative form of transport.

Mr. Moelwyn Hughes suggested that cheap half-day tickets be issued, avoiding peak hours, say from 10 a.m. to 4 p.m., from any one station to any other station. There was a large amount of social travelling in London and this was a matter which should be encouraged both for the social benefit of London and for the benefit of London Transport finances.

Mr. Valentine said that that had been done on a limited scale and if they thought it would improve revenue they should adopt it. They could not confine cheap day fares to the newcomer and not to the passenger who was travelling already.

Mr. Hughes suggested a single fare for the return journey for the cheap half-day ticket.

Mr. Valentine said a cheap day fare on this basis had been used substantially since the war by the Railway Executive with "discouraging" results.

Replying to questions by Mr. Leon Maclaren, counsel for East Ham and West Ham Corporations, about the cost of running tube trains, Mr. Valentine stated that it was proposed shortly to increase the frequency of trains on the Bakerloo Line during off peak hours by running two short trains in place of one long one. This would reduce the interval between trains from 3¼ to 2½ min. It was part of a long-term policy to arrest the decline of traffic on the railways and eventually the "uncoupling" policy would be carried out on the whole of the Underground system. The improvement on the Bakerloo Line would result in a slight saving in running costs.

Mr. Valentine, at the resumed hearing on June 6, asked by Mr. R. R. Harris, for the London Passengers' Association, why it was was necessary to proceed with the integration of charges this year, replied that it was an obligation under the Transport Act and that the Minister had already had to extend the time limit for the scheme.

Asking whether there was going to be an increase in the cost of working due to the change-over from trams to buses, Mr. Harris said: "Is it a fact that you will have to have three buses to replace two trams?"

Six Buses to Five Trams

Mr. Valentine said he thought it was more like six buses to five trams, but there would be additional staff required. It would be impossible to keep the trams going because they were on their last legs. At this stage it would be impossible to stop the scheme, for much of the physical work had already been carried out, such as converting tram depots for buses.

Earlier, Mr. Harris had asked Mr. Valentine if he was satisfied that thousands in the workers category could afford 2s. 6d. a week extra on their fares.

Mr. Valentine said he was not entirely satisfied. He thought there would undoubtedly be some diminution in the volume of traffic over short distances, in the early morning, and by raising the cost of travel some people probably would travel by bicycle or motorcycle.

Mr. D. J. Turner-Samuels, for the London Trades Council, quoted figures which showed that for journeys of 10 miles and over, workmen's return tickets purchased on a six-day week basis proved more expensive to the buyer than three-monthly season tickets. He suggested that workmen were subsidising season tickets holders.

Mr. Valentine said that there is no rule that a workman could not buy a season ticket.

The hearing was adjourned until the next day.

BRITISH STANDARD FOR WROUGHT-IRON AND MILD-STEEL HOOKS.—This British Standard has been revised. Compared with the 1945 edition the internal shape of eye-hooks for use with chain has been amended and the projection of the point of the hook in all trapezoidal eyehooks has been decreased. Copies may be obtained from the B.S.I. Sales Department, 24, Victoria Street, London, S.W.1, price 5s.

Coras Iompair Eireann

Mr. D. Morrissey and Mr. T. C. Courtney on the future of transport in Ireland

The first meeting of the board of Coras Iompair Eireann was held on Monday last. Before the meeting, however, members were addressed by Mr. D. Morrissey, Minister for Industry & Commerce, and by Mr. T. C. Courtney, Chairman of Coras Iompair Eireann.

Mr. Morrissey, after wishing the board success, said that the task of organising the affairs of Coras Iompair Eireann to ensure that as soon as possible its revenue would cover normal day-to-day expenses was of such magnitude and complexity that it would demand for its successful performance the greatest possible degree of attention by the board, and the full loyalty of all the officers and employees as well as the understanding and sympathetic support of the community.

In order to afford the board the greatest freedom of action the Act provided that it should be free from all official control in the determination of its rates and charges. This was an important departure from a practice which had obtained for the best part of 100 years.

As a measure of relief to the undertaking a supplementary estimate was passed towards the end of last year for a sum of £4,091,000 of which £1,627,000 was voted by way of free grant to meet accumulated working losses. This grant included sums required to meet debenture interest, amounts which were due to pension funds, and instalments due on income tax. The issued capital of the undertaking was nearly £16,500,000 of Government guaranteed transport stock. The interest on this stock up to March 31 was approximately £450,000, and provision would be made to meet this payment of interest from the central fund.

The Act provided for a further £7,000,000 for capital purposes other than the acquisition of any other transport undertakings or the redemption of stock. The financial provision was regarded as affording the board a reasonable measure of assistance in the task with which it would have to cope. The capital provision of £7,000,000 was a relatively large amount for a small country and the Government hoped it would prove sufficient for the rehabilitation of the concern.

The Act, though it represented a considerable advance, was never intended to be a final solution of the transport problems. Many of these which still remained were dealt with in the report presented to the Government by Sir James Milne and his colleagues.

Mr. T. C. Courtney said that they were taking over the former Coras Iompair Eireann undertaking and that of the Grand Canal Company and must weld these into an efficient whole. Until the C.I.E. could be put on a sound financial basis every effort would be made to reduce costs where these could be controlled by the board. It was only by increasing its traffic that a satisfactory result would eventually be forthcoming.

The board had no monopoly of transport; it must exercise its functions in the face of intense competition by hauliers and traders using their own transport, while on the passenger side, the great and growing number of private cars in use deprived it of a great deal of traffic. Only by the provision of suitable and economical services, comparable in all respects with the alternative service which the public could obtain or provide for itself, would the ultimate aim be realised.

It should be recognised by those who considered that they saved money by having their own transport, that they would have to bear, in addition to their own transport costs, their portion of the contribution which the State must pay to meet the losses incurred by C.I.E.

The board would take steps, as quickly as circumstances allowed to provide itself with new rolling stock, power units, modern appliances for expediting the handling of traffic, and do all other things necessary for the fullest implementation of the duties placed on it by legislation.

It was inevitable that in the process of integration of road and rail services, certain unremunerative and unnecessary activities should be eliminated, but before any such steps were taken the fullest examination of the circumstances would be made and the procedure laid down in the Act would be carried through. It would be the endeavour of the board to satisfy the public beforehand that any alternative proposed would meet all the reasonable needs of the public.

There had, unfortunately, been a considerable amount of difficulty in the last year or two in the relations between C.I.E. and certain sections of its employees, and this has resulted in unrest and stoppage of services. In consequence traders and others had to some extent lost confidence in the undertaking and had tended to provide themselves with their own transport. A continuance of this state of affairs might well lead to further and serious diversion of traffic. Much of this unrest had been due to a misunderstanding of the position. There existed numerous agreements between Coras Iompair Eireann and its employees under which these relations are regulated. These agreements were freely negotiated and provided reasonable facilities for dealing with any grievance which might arise. It was, therefore, unnecessary, apart from being wholly undesirable, that any section of the employees should take summary action to cease working, thereby causing grave inconvenience to the public and hardship to other sections of the employees.

Notes and News

Locomotive, Carriage and Wagon Tyres for Pakistan.—The High Commissioner for Pakistan invites tenders for locomotive, carriage and wagon tyres. See Official Notices on page 667.

Railway Convalescent Homes.—The head office of the Railway Convalescent Homes has been removed to Speen House, Portman Mansions, 124A, Baker Street, London, W.1; telephone Welbeck 9386.

Road Accidents During March.—Road casualties in March totalled 13,605 compared with 11,577 in the corresponding month last year, and were the highest for any March since the war. Of this total, 354 were killed and 3,247 seriously injured, compared with 334 and 2,831 in March, 1949.

Derailment at Ware Hill Bridge.—Eight passengers, the driver, and the fireman were taken to hospital after the engine and three coaches of the North Eastern Region 12.15 p.m. train from Newcastle to York was derailed at Ware Hill Bridge, 10 miles north of York, on June 5. None of the passengers was seriously injured, but the driver was detained with suspected fracture of the ribs.

Engineer Required.—A civil engineering company, specialising in railway trackwork, requires the services of an experienced railway engineer for installation of sidings and to operate with a gang of about 20 men. See Official Notices on page 667.

Railway Benevolent Institution.—At a recent meeting the board of the Railway Benevolent Institution granted annuities to three widows and seven members amounting to £199 10s. a year, one funeral gratuity of £5 and authorised 32 grants amounting to £383 from the special benevolent fund in cases of immediate necessity. Grants made from the casualty fund during April amounted to £601 10s. 6d.

Station Name Posters.—The London Midland Region, Public Relations & Publicity Office, has evolved standard double-royal and quad-royal paper station name posters in Regional colours, for temporary display at places deficient in name indication and until permanent re-signing can be

undertaken. An illustration above shows one of the signs at Willesden Junction, where a number have been displayed on both the high level and low level stations. A total of 1,386 posters for 623 stations is to be displayed.

Sir Cyril Hurcomb Visits Norway and Sweden.—Sir Cyril Hurcomb, Chairman of the British Transport Commission, visiting Norway and Sweden, attended a dinner given in his honour by the Norges Rederforbund (Norwegian Shipowners' Association) yesterday, June 8. During his stay in Scandinavia Sir Cyril Hurcomb hopes to visit the Norwegian State Railways and to inspect part of the electrified system of the Swedish State Railways. He will return to England on June 25.

G.N.R. (I.) Summer Services.—The G.N.R. (I.) Summer timetable includes extra services on both main lines and branches. There is a new train from Dublin at 7.30 a.m., arriving Belfast at 10.35 a.m., returning at 2.15 p.m., and reaching Dublin at 5.15 p.m. It is first and third class only and consists of one of the new diesel sets. The former 2.45 p.m. Dublin to Belfast will leave at 2.30 p.m., as from June 26, and will be followed by a train at 2.45 p.m. to Dundalk, for passengers for Clones, Enniskillen and Derry. From this date also, there will be a 5.15 p.m. from Derry to Dublin via Portadown. Through coaches from Belfast to Warrenpoint will be attached to the noon Dublin express and for Bundoran to the 11.15 a.m. Derry express. There are increased services to Drogheda and Howth from Dublin. A

limited stop train leaves Belfast for Newcastle at 9 a.m. on Saturdays and Sundays.

Indo-Pakistan Goods Traffic Resumed.—It is reported that freight rail traffic was resumed on May 14 from Amritsar to Lahore, after eight months during which Indo-Pakistan trade stopped because of currency difficulties.

B.T.H. Exhibits at Mechanical Handling Exhibition.—The many exhibits of the British Thomson-Houston Co. Ltd., at the Mechanical Handling Exhibition at Olympia include electric motors and control gear for battery vehicles, cranes, hoists, conveyors, elevators, and so on, electronic control equipment, gearboxes and geared motor units, and fractional horsepower motors.

Great Western of Brazil Railway.—The directors of the Great Western of Brazil Railway Company announce that, by mutual consent, the period for ratification of the agreement with the Brazilian Government for the rescission of the company's contract signed in London on May 26, 1949, has been extended by a further 60 days till July 19, 1950.

Effect of Petrol Derationing on Private Road Haulage.—Mr. R. Morton Mitchell, Chief Executive Officer of the Road Haulage Association, has expressed his belief that the end of rationing will mean little or no increase in fuel consumption by the 120,000 vehicles operated by road hauliers under free enterprise. It should, he considers, remove the feeling of hauliers that fuel officers were discriminating against them in favour of nationalised transport. The view of the Association remains unchanged, namely, that the increased taxes on fuel and commercial goods vehicles are harmful to trade and industry, and that the case for their immediate withdrawal is as strong as ever.

Beer in Bulk by Rail.—Two new units for the conveyance of beer in bulk by rail have been completed by the London Midland Region of British Railways and these are illustrated below. The rail chassis was built at Derby Works and the tanks by W. P. Butterfield Limited at Shipley. The tanks are fabricated by electric arc welding and have a capacity of 720 gal. They are mounted on mild-steel cradles with holes for lifting shackles, and are constructed to withstand a working pressure of 40 lb. per sq. in. and a test pressure of 60 lb. per sq. in. hydraulic.

Riverside Station, Liverpool.—Since the paragraphs in our April 7 and 21 issues on through engine workings between Riverside Station, Liverpool, and Euston, London Midland Region, Class "6P" 4-6-0 passenger tender engines have been authorised to work to and from the Riverside Station. Among other types additionally authorised to work over the Riverside Station line is the L.N.W.R. Class "7F" 0-8-0 freight tender engine.

Railway Benevolent Institution.—The annual meeting of members of the Railway Benevolent Institution will be held at Euston Station (Room 131) on Friday June 30, at 4 p.m., to receive the report of the board of management, grant permanent annuities to 22 widows and two members in the officers' department and to grant permanent annuities to 25 widows and 24 members in the servants' department, and to transact the ordinary business of the institution. The board will appoint to contingent annuities 623 widows and 335 members in the servants' department, being applicants in excess of the number of permanent annuities to be granted. There will be no ballot on this occasion.

Railway Students' Association.—On June 3, about 50 members of the Railway Students' Association, London School of Economics & Political Science, visited the Shenfield electrified line of the Eastern Region, through the courtesy of Mr. C. K. Bird, Chief Regional Officer. The party first travelled from Liverpool Street to Shenfield to obtain a general insight into the electrification from the passenger's viewpoint, and then returned to Chadwell Heath to inspect the current control station and one of its satellite sub-stations. The party then was conducted round the new car sheds and sidings at Ilford, including the yard signalbox, rotary carriage washing plant, cleaning and inspection sheds, and the repair section, serving the two 25-ton overhead travelling cranes and the machine shop which is being laid out with modern machine tools. Apart from coach bodywork and tyre fitting, which will be sent to Stratford, all repairs eventually will be carried out at Ilford. The visit concluded with a paper presented by Mr. A. R. Atkinson, of the office of the Chief Regional Officer, reference to which is made in an editorial note in this issue.

North Central Wagon & Finance Co. Ltd.—An ordinary dividend of 3d. a £1 share (5s. paid) is being paid by the North Central Wagon & Finance Co. Ltd., plus a special distribution, resulting from sale of part of the company's investment in Wagon Repairs Limited, of 3d. a share. Group profits for 1949 were £20,843 (£171,507), of which £110,903 (£10[illegible]705) was paid in tax.

Cranes for Railway Work.—Steels Engineering Products Limited are showing a comprehensive range of mechanical handling equipment at Olympia. Various types of cranes are exhibited, including a 6-ton model, specially developed for use in railway yards; this crane is fitted with a 21-ft. 9-in. jib, a totally-enclosed cab, and with specially strengthened fenders and buffers front and rear. In addition there is a Coles 1-ton crane, fitted with a special 12-ft. searcher jib, for unloading railway box containers either from deck level or ground level.

Irish Transport Stock.—Coras Iompair Eireann 3 per cent. debenture, 1955-60, will be converted into an equal amount of 3 per cent. guaranteed transport stock, 1955-60, in accordance with the provisions of the Irish Transport Bill, to which reference was made in our May 26 issue. The common stock will be converted into 3 per cent. guaranteed transport stock, 1975-85, on the basis of £80 transport stock for every £100 common stock. The Grand Canal Company's ordinary, preference and debenture stocks will be converted into equal amounts of 3 per cent. guaranteed transport stock, 1975-85. The vesting date in all cases will be June 1. The interest dates for the transport stocks are January 15 and July 15.

Awards to Railwaymen for Meritorious Conduct.—At British Railways Manchester (London Road) offices on May 15, eight railwaymen from Manchester and district were presented with awards granted to them from the "Sir Edward Watkin" fund for meritorious conduct. Mr. G. W. Stewart, District Operating Superintendent, Manchester, when making the presentations, complimented each man on his promptitude and presence of mind. Certificates and cash awards were handed to Messrs. Frank Poole, Albert Winstanley, Charles H. Schonut, Llewellyn Roberts, James Ledwich, Bernard Grantham, John H. Gill, Albert H. Beech. The fund owes its origin to Sir Edward W. Watkin, a Chairman of the Great Central Railway, and at one time M.P. for Stockport.

B.T.C. Police First Aid Competition.—The South Western Area Eliminating Competition in the British Transport Commission Police National First Aid Competition was held at Old Oak Common on May 16, when teams from Dover, Brighton & Newhaven and Exeter (two) competed. The winning team was Dover, who will represent the area in the final of the British Transport Commission Police First Aid Competition, which is being held in London during September; the second prize winner was Exeter "A." The adjudicator was Dr. M. M. Scott. Mr. S. W. Smith, Assistant Chief of Police, presided over the subsequent proceedings and the prizes were presented to the two winning teams by Mr. R. Burgoyne, Regional Staff Officer.

Beer containers for service in the London Midland Region (see paragraph above)

OFFICIAL NOTICES

THE High Commissioner for Pakistan invites tenders for Locomotive, Carriage & Wagon Tyres. Forms of tender, which are returnable by July 11, 1950, may be obtained from the Commercial Secretary, Supply & Stores Department, 40, Lowndes Square, London S.W.1, between the hours of 10 a.m. and 4 p.m. Mondays to Fridays, on payment of a fee of five shillings (not returnable) per tender. The reference SD. 6387 should be quoted on all applications for tender forms.

GLOUCESTER RAILWAY CARRIAGE & WAGON CO. LTD., Gloucester, require the services of experienced rolling-stock Draughtsmen. Five-day week. Staff pension scheme. Apply, stating age, details of experience, and salary required, to Chief Designer.

CIVIL Engineering Company specialising in Railway Trackwork require experienced Railway Engineer for installation of Sidings, etc., to operate with gang of about 20 men. Knowledge of designing layouts an advantage. Excellent prospects in well established and progressive company. Full particulars in strict confidence to Box 750, *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

STANDARD MILITARY RAILWAY BRIDGES. By F. S. Bond. A description of the different types of bridges designed for rapid erection in the field by the Allied Forces, and of the various methods employed in such erection. 28 pages. 9 in. by 12 in. fully illustrated. Paper cover, 5*s*. By post 5*s*. 2*d*. *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

WANTED for Peruvian Railways, Assistant Locomotive Superintendent, commencing salary £1,200, and Foreman for locomotive repair shop, commencing salary £800. Colloquial knowledge of Spanish essential.—Write Box "B.J." c/o J. W. VICKERS & Co. LTD., 7/8, Great Winchester Street, London, E.C.2.

THE RAILWAY SYSTEM OF JAMAICA. A general description of the system and its traffics, with an account of economic problems; the motive power used; and some features of operation. By H. R. Fox, B.Sc., M.Inst.C.E., General Manager, Jamaica Government Railway. Reprinted from *The Railway Gazette*, January 5 and 12, 1945. Price 1*s*. Post free 1*s*. 2*d*. *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

Western Region, who is also Chairman of the Western Region Ambulance Committee.

Institute of Transport Argentine Section.—At its recent annual general meeting, the Argentine & River Plate Section of the Institute of Transport voted unanimously for the continuation of the Section, in spite of decreases in membership. Officers for the forthcoming year were elected as follow:—Chairman: Mr. F. B. Lowry; Vice-Chairmen: Mr. C. C. Horton and Mr. A. Waller; Honorary Treasurer: Mr. S. E. Warner; Honorary Secretary: Mr. R. Veitch.

Vokes (Canada) Limited.—Vokes Limited, of Henley Park, Guildford, has inaugurated a subsidiary company, Vokes (Canada) Limited, in Toronto. In addition to handling the whole range of Vokes equipment, Vokes (Canada) Limited will also be acting as sole agent for Canada for a number of other British companies. Mr. J. Parkinson, the former Sales Manager of the English company, has been appointed Vice-President & General Manager of Vokes (Canada) Limited.

British Electric Traction Co. Ltd.—The net profit for the year ended March 31, 1950, of the British Electric Traction group was £411,618; as, however, more than a quarter of the annual revenue is normally received in the three months ending June 30, this figure is not comparable with that of £269,727, the net profit for the previous nine months to March 31, 1949. A final dividend of 7 per cent., free of tax, is being recommended, making 12 per cent. for the year, against 9 per cent. for the previous nine months.

Road Hauliers (East Midlands) Limited.—A new organisation comprising approximately 300 hauliers in the East Midland Area has been set up by the Road Haulage Association to provide trade and industry with a comprehensive road haulage service under free enterprise. The organisation, known as Road Hauliers (East Midlands) Limited, has branches at Nottingham, Derby, Mansfield, Newark, Worksop, Leicester, Boston, and Scunthorpe. The Chairman is Mr. H. Stone. It is hoped that report centres now being established will eliminate wasted loading capacity by enabling vehicles to carry full loads on all journeys including return trips.

West Riding Automobile Company.—The revenue for 1949 of the West Riding Automobile Co. Ltd. was £889,783, compared with £845,857 for 1948. Operating expenses were £572,493 (£560,469), tax on profits £35,225 (£31,654), other taxes £83,623 (£79,251), and net revenue £201,194 (£175,741). Sums of £7,633, as for the previous year, are to be allotted to preference dividend, £81,457 (£56,288) to depreciation, and £33,600 (£32,100) to future tax. An ordinary dividend of 15 per cent. is recommended as before. £45,000 will be transferred to reserve account and the forward balance is £19,894 (£20,196). Negotiations for sale of the undertaking to the British Transport Commission have been discontinued as the price obtainable was much below the assessment of the value of the undertaking.

British Insulated Callender's Cables.—The group trading profit for 1949 of British Insulated Callender's Cables Limited was £6,738,264, against £6,596,476 for 1948; £771,131, against £745,031, has been allocated to depreciation. Taxation took £3,150,567 (£3,577,527), and the net profit was £2,881,797 (£2,669,734). A final ordinary dividend is to be paid of 4¾ per cent., making 6¾ per cent. for the year, the same as for 1948.

Robert Stephenson & Hawthorns Limited.—The net profit for 1949 of Robert Stephenson & Hawthorns Limited was £82,316 as compared with £96,430 for 1948, plus a surplus tax provision of £57,396 (nil). The sum of £41,500 is being set aside for tax, £50,000 for deferred repairs, and £35,000 for general reserve. From the balance of £14,676 a dividend is being paid of 5 per cent., and a bonus of 2 per cent., both unchanged. Warning is given of growing competition both in the home and export markets, in the latter notably from French, German, and Japanese locomotive builders.

Recent Railway Contracts.—The London Midland Region of British Railways has recently placed contracts as follows: L. Fairclough, Limited, Adlington, for reconstruction of superstructure of bridge carrying a road over the railway at Tean Halt, Cheadle, for the Ministry of Transport; W. Freer Limited, Leicester, for central heating and hot-water services at Peterborough Crescent carriage & wagon repair shops; T. Wrigley Limited, Manchester, for reconstruction of bridge carrying Stamford Street, Ashton, over the railway for the Lancashire County Council, and for reconstruction of bridge carrying the railway over Milking Lane at Darwen; W. H. Heywood & Co. Ltd., Huddersfield, for supplying and fixing patent aluminium roof glazing and flexible reinforced bitumen flashings at Rhyl carriage shed.

Trent Motor Traction.—In his address to the annual general meeting, on March 7, of the Trent Motor Traction Co. Ltd., whose results were given in our February 17 issue, the Chairman, Mr. J. W. Womar, said that new records had been achieved in passenger journeys and mileage. He drew attention to the losses incurred on the special services for workers, due mainly to their one-way character, and pointed out that 42 per cent. of their regular services also were run at a loss. During the year they had pursued their policy of co-ordination with other road transport operators and with British Railways. Nationalisation would mean that the road passenger industry would have to make good losses incurred by other industries controlled by the British Transport Commission. Their own fares were substantially the same as those of 30 years ago.

London Excursion from Glasgow.—On Friday night, May 12, the first day excursion train for London since 1939 left Glasgow (Central) at 9.25 p.m. and Motherwell at 9.46 p.m.; it was also the first combined rail and theatre excursion arranged by British Railways in conjunction with the Creative Tourist Agents' Conference to be run from Scotland. The special train was due at London (Euston) at 7 a.m. on Saturday morning and returned at 11.25 p.m. on Saturday night. The inclusive charge of £5 7*s*. 6*d*. provided third class rail fare to and from London; breakfast, lunch and high tea in London; sightseeing motor tour and admission to a theatre show at the Hippodrome or at the Casino.

Polish-Swedish Train Ferry.—It is reported that work on the train-ferry *Kopernik* has been completed in a Polish dockyard, and that the ferry will soon be put in service between the Oder ports and Trelleborg, Sweden. The journey is scheduled to take eleven hours.

Superheater Company Results.—The consolidated balance for 1949 of the Superheater Co. Ltd. was £403,729, compared with £368,508 for 1948. Deduction of £186,979 (£173,380) tax and other items leaves £168,564 (£145,745) profit. An interim dividend is proposed of 20 per cent., as for last year, with a final dividend on £175,000 (£131,250) capital of 19 per cent., against 25 per cent., leaving £63,171 to go forward.

Permanent Way Institution, Irish Section.—At a meeting of the Permanent Way Institution, Irish Section, held at Dundalk on May 12, there were 98 members present. At the G.N.R. (I.) sleeper depot they were shown the boring, adzing, and creosoting of sleepers. Later, the chairing process was demonstrated, using both fangbolts and chair screws. Mr. A. M. Plumer, Chairman, Irish Section, introduced Ganger T. McGailey, who read a paper on "Maintenance by a Length Gang." Ganger McGailey emphasised the importance of good comradeship in making for successful work, and showed how different factors such as geographical and traffic conditions, and classification of track play an important part in a gang's duties. He described the various maintenance operations on his section and his methods of dealing with them. Many members pre-

sent spoke on the subject of the paper. Members were later taken on a tour of the rail shop and shown the manufacture of points and crossings. Manganese crossings in use in the main Dublin-Belfast line were also inspected.

Liverpool-Cardiff Helicopter Service.—A service between Liverpool and Cardiff, which is claimed to be the only scheduled helicopter passenger service in the world, was inaugurated on June 1. Two helicopters of British European Airways left Speke Airport for Cardiff *via* Wrexham at 9.30 a.m.; they were carrying a cargo of drugs for South Wales and penicillin for Cardiff Infirmary

Stewarts and Lloyds Results.—The consolidated net profits of Stewarts and Lloyds Limited for 1949 were £4,377,844, compared with £3,017,071 in the previous twelve months, after deduction of £3,426,150 tax, against £2,298,667. The directors propose to maintain payment on the deferred shares at 12½ per cent. and to place £1,000,000 (£1,250,000) to general reserve. They attribute the increased profits to greater general efficiency and to increased output due to extra capacity resulting from the post-war development plan.

Vickers Limited Results.—The directors of Vickers Limited recommend a final ordinary dividend of 4½ per cent. actual, less tax, making 6½ per cent. for the year ended December 31, 1949, on £12,315,484, against 12½ per cent. on £6,157,742 for 1948. Net profit was £1,625,402 (£1,429,382) and the net group profit was £3,290,724 (£3,373,948) after charging £4,548,602 (£3,090,092) tax and £589,257 (£428,154) outside shareholders' interests. The issued ordinary capital was increased from £6,157,742 to £12,315,484 on June 8 last. The carry forward is £8,573,024, as compared with £6,858,951, while total net assets were £52,050,646, against £49,501,266.

Colvilles Limited.—Record production is announced by Sir John Craig, Chairman of Colvilles Limited, in his statement issued with the report and accounts for the year 1949; production of ingots showed an increase of 6·8 per cent. over the previous year. The development of the firm, said Sir John Craig, had been mainly directed towards equipment for the shipbuilding, structural engineering, boilermaking, locomotive, and wagon building industries. With regard to plates, sections, and joists, the firm was responsible for 25 per cent. of the national output, and for boiler plates 55 per cent. Their exports were varied, and were not as large as they would have liked, because home consumers had priority; but they must have an export market to maintain full production, and so keep costs down. As to nationalisation, the extension to the steel industry of sluggish and over-centralised methods would be a blow to the national economy.

Forthcoming Meetings

Until June 17 (Sat.).—Mechanical Handling Exhibition at Olympia, London.

June 10 (Sat.).—Permanent Way Institution, Manchester & Liverpool Section. Joint meeting with North Wales Section. Visit to Britannia Tubular Bridge.

June 14 (Wed.).—Railway Students' Association, London School of Economics & Political Science. Visit to Paddington Goods Depot, Western Region.

Railway Stock Market

Strength of industrial shares has featured stock markets, which had their most active week this year, although British Funds were easier and lost a small part of recent gains, terms of the £20,000,000 issue of British Coal stock being awaited. The view has gained ground that leading industrial companies should be able to maintain dividends, the assumption being that in most instances, increased turnover may offset in a large measure the effect on net profits of rising costs of materials, which has been accelerated since the £ was devalued. This more optimistic view has been induced by reports of further progress in export markets. Sentiment has been helped by the belief which now seems to be gaining ground that the General Election may not be held until next year.

With business centred on industrial shares, interest in foreign rails has receded, and movements were mostly small and against holders, due mainly to the small demand in evidence rather than to selling. Speculators who bought at levels well below current prices have now mostly sold their holdings in Leopoldina Great Western of Brazil, and remaining holders are unlikely to sell but await the pay-out money, particularly as current market prices are well below the expected pay-outs for the various stocks. At the time of going to press, Leopoldina ordinary has eased to 9¾ and the preference to 26¾, while the 4 per cent. and 6½ per cent. debentures were 93 and 133. Leopoldina Terminal debentures were 88 and the ordinary units 1s. 7¾d. United of Havana stocks continued active, but the 1906 debentures fluctuated again, awaiting news from Cuba and have receded to 25½. Cuban Central 4½ per cent. debentures came back to 57½.

Great Western of Brazil at 141s. 3d., and San Paulo 10s. units at 17s. 6d., failed to keep best prices this week, but remained fairly active. Antofagasta ordinary was 7¾ and the preference 41½, while Brazil Rail gold bonds were quoted at 42. There were only small movements around 29⅛ in Canadian Pacifics; the preference stock was 68¾ and the debentures 98½. Manila "A" debentures and preference shares were 86 and 8s. 6d. respectively. French railway sterling bonds attracted buyers, Orleans and Midi both improving to 95, while Seine 4½ per cent. were 101. Nitrate Rails were quoted at 77s. 6d. British Transport stocks have eased slightly with the general trend in British Funds and the 3 per cent. (1978-88) are 89⅜.

Helped by the good impression created by financial results that have come to hand, road transport shares showed firmness, their investment merits being generally recognised. Moreover it is assumed that any further acquisitions by British Transport would probably have to be on a basis above current market prices for the shares. In any case it is also being widely assumed that there may be no further big take-overs by British Transport until after the next General Election. Southdown have been firm at 117s. 6d. on the results and unchanged 25 per cent. distribution and West Riding rallied to 63s. Lancashire Transport were 78s. Maidstone & District changed hands at 88s. 9d., and B.E.T. deferred stock was steadier at £445.

Iron and steels, although firm, have only participated to a moderate extent in the further uptrend in industrial shares, partly because the outlook may have been obscured by the Schuman plan for pooling steel and coal resources. Meanwhile, the question of nationalisation will not be finally decided until the next General Election, and many companies now require more capital for development and expansion plans. The Steel Act prevents higher dividends until there is a final decision. In the circumstances it is difficult to offer additional shares on attractive terms, and the only alternative is to issue debentures. Pending issue terms of John Summers debenture issue are being awaited with considerable interest in the City, where it is assumed they may have a right to early redemption in the event of nationalisation. John Summers have held steady at 28s. 9d., Guest Keen rose further to 43s. 3d., and United Steel were steady at 26s. 6d.

Shares of locomotive builders and engineers were firm, but, so far, have not participated in the uptrend of markets despite their attractive yields. Vulcan Foundry were 20s. 3d., North British Locomotive 17s. 9d., Beyer Peacock 21s. 9d., and Wagon Repairs 16s. 7½d., but Gloucester Wagon rose to 50s. and Charles Roberts were up to 83s. Birmingham Railway Carriage were 28s. 3d. and Hurst Nelson 57s. at Glasgow.

Traffic Table of Overseas and Foreign Railways

	Railway	Miles open	Week ended	Traffics for week: Total this year	Traffics for week: Inc. or dec. compared with 1948/49	No. of week	Aggregate traffics to date: Total 1949/50	Aggregate traffics to date: Increase or decrease
South & Central America	Antofagasta ...	811	28.5.50	£ 51,310	— £ 7,170	21	£ 1,247,024	— £ 152,360
	Costa Rica	281	Apr., 1950	c852,959	— c156,386	43	c8,449,421	— c1,679,807
	Dorada	70	Apr., 1950	39,295	+ 9,554	17	165,766	+ 45,455
	Inter. Ctl. Amer. ...	794	Mar., 1950	$1,310,388	+ $114,029	13	$3,778,654	+ $493,309
	La Guaira	22¾	Apr., 1950	$81,912	— $40,809	17	$345,161	— $107,313
	Nitrate	382	31.5.50	15,158	— 4,890	21	194,106	+ 16,231
	Paraguay Cent. ...	274	26.5.50	£227,865	+ £118,913	47	£7,055,037	+ £2,169,502
	Peru Corp. ...	1,050	Apr., 1950	S4,263,000	— S461,658	43	S57,660,058	+ S16,899,941
	,, (Bolivian Section)	66	Apr., 1950	Bs. 10,165,000	+ Bs. 1,158,770	43	Bs. 97,511,664	+ Bs. 11,761,937
	Salvador	100	Febr., 1950	c239,000	— c72,000	35	c1,300,000	— c139,000
	Taltal	154	Apr., 1950	18,280	+ 10,365	43	138,920	+ 50,665
Canada	Canadian National†	23,473	Apr., 1950	14,659,000	+ 1,207,000	17	53,550,000	+ 1,549,000
	Canadian Pacific† ...	17,037	Apr., 1950	9,928,000	— 118,000	17	37,654,000	— 911,000
Various	Barsi Light* ...	167	Mar., 1950	34,522	+ 3,022	52	358,762	+ 22,275
	Egyptian Delta ...	607	10.4.50	17,780	— 2,730	1	17,780	— 2,730
	Gold Coast... ...	536	Mar., 1950	258,498	— 8,915	52	2,806,753	+ 154,946
	Mid. of W. Australia	277	Mar., 1950	33,778	+ 3,481	39	275,873	+ 15,568
	Nigeria	1,900	Jan., 1950	502,360	+ 38,978	44	5,017,814	+ 266,573
	South Africa ...	13,347	6.5.50	1,573,895	+ 64,586	8	7,980,595	+ 438,109
	Victoria	4,744	Feb., 1950	1 826,957	+ 342,160	35	—	—

* Receipts are calculated @ 1s. 6d. to the rupee

† Calculated at $3 to £1